

## REVIEW AND APPROVALS

### POTOMAC RIVER NATIONAL WILDLIFE REFUGE COMPLEX

#### MASON NECK NATIONAL WILDLIFE REFUGE

Lorton, Virginia

#### OCCOQUAN BAY NATIONAL WILDLIFE REFUGE

Woodbridge, Virginia

#### FEATHERSTONE NATIONAL WILDLIFE REFUGE

Woodbridge, Virginia

### ANNUAL NARRATIVE REPORT

Fiscal Years 2001 – 2004

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Refuge Manager	Date
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Refuge Supervisor – South Review	Date
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Regional Office Approval	Date
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# POTOMAC RIVER NATIONAL WILDLIFE REFUGE COMPLEX

## Woodbridge, Virginia

### INTRODUCTION

In 1998, Mason Neck National Wildlife Refuge, Occoquan Bay National Wildlife Refuge, and Featherstone National Wildlife Refuge, were reorganized into the Potomac River National Wildlife Refuge Complex. Reasons for the reorganization were the realization that Occoquan Bay NWR (National Wildlife Refuge) rivaled Mason Neck NWR in complexity and to better apportion staff and resources to the needs of the three refuges. All three refuges border Occoquan Bay at the junction of the Fairfax County and Prince William County. Mason Neck NWR (on the northeast side of the bay) is the oldest refuge, being established in 1969 and the largest at 2,227 acres. As the first national wildlife refuge specifically established under the Endangered Species Act for bald eagles, its focus is on forest, marsh, and riverine habitat important to the bald eagle. On the southwest side of Occoquan Bay is Featherstone NWR, 325 acres of marsh and riverine habitat important to both waterfowl and eagles. Occoquan Bay NWR is on the west edge of the bay between the other two refuges and is the most recently established of the three. It was established in 1998 as a combination of land previously acquired as Marumsco NWR and recently acquired military surplus lands to form the new 640 acre refuge. Its primary values are the extensive grasslands interspersed with marshes and early successional shrub and forest areas with value to neotropical migrants and grassland dependent species.

The office for the complex is located in Woodbridge, Virginia, about 9 miles from Mason Neck and a mile from Occoquan Bay and Featherstone Refuges. The office is a store front managed rental space in a small strip mall.

# MASON NECK NATIONAL WILDLIFE REFUGE

## Lorton, Virginia

### INTRODUCTION

Mason Neck National Wildlife Refuge is located in Virginia, 18 miles south of Washington, D.C. Nestled on an 8,000 acre boot-shaped peninsula jutting out into the Potomac River, the refuge is dominated by mixed hardwood and pine forests, high bluffs, and about 300 acres of freshwater marshes. From the initial acquisition of 845 acres in 1969, Mason Neck has grown to 2,277 acres, including 7789 acres leased in 1982 from the Northern Virginia Regional Park Authority. Until 1974, the Mason Neck National Wildlife Refuge was a subunit of Blackwater National Wildlife Refuge, based out of Cambridge, Maryland. Mason Neck then became an independent unit with a manager and two subunits of its own, Featherstone NWR and Marumsco NWR (which later became Occoquan Bay NWR).

The refuge was established in 1969 as the Nation's first bald eagle refuge using funds provided under the Endangered Species Act. Eagles nested and wintered on the peninsula as far back as colonial times but in the 1950's and 1960's, succumbed to development and pesticides. With greater awareness, better protection nationally and regionally of the birds and their habitat, and reduction in pollution, the eagle population has been making a recovery. In 1999, there were 3 eagle nest sites on the refuge, one on the adjacent state park, one on the adjacent Gunston Hall Plantation, and two on private lands elsewhere on the peninsula. In an expanding ring, there are at least 3 more nests within a five mile radius on the Virginia side of the Potomac River and reports of several more nests on neighboring Maryland lands.

Although the refuge is located within driving distance of approximately 10 million residents of Virginia, Maryland, and Washington, D.C., the refuge's annual visitation is only around 20,000 people. Low visitation may be due to the limited amount of public use facilities or the fact that there are over 400 nearby Federal, state, regional, county and community parks. On the Mason Neck peninsula alone, the refuge is bordered by the Bureau of Land Management, Mason Neck State Park, Gunston Hall Plantation, and Pohick Bay Regional Park. Together in a loose association entitled the Mason Neck Management Area, the federal, state, and regional government agencies can share manpower and material resources and minimize duplication of effort by coordinating recreational activities. Each agency can focus on its strengths of general recreation, outdoor or wildlife dependent recreation, resource protection, and historical interpretation. Collectively the Mason Neck Management Area ensures that the public has the opportunity to enjoy a variety of activities without diminishing the purposes for which we were all created.

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## A. HIGHLIGHTS



## B. CLIMATIC CONDITIONS

The refuge during the past five years has had a variety of weather conditions, for example in 2002 it was one of the drier years on record while in 2003 was one of the wettest. Although, was not as bad as 1999, when the refuge was in record drought condition and for the east coast as part of El Nino climate condition. Referred to in local news papers as the "Great Drought of '99", it was the area's third consecutive summer of drought and the third worst of this century in northern Virginia Evaluated by the Palmers Drought index that compares the amount of water entering the soil through precipitation and the amount leaving through evaporation, this was the worst drought since 1969. By the index, zero is normal, minus 2 to 3 is moderate, minus 3 to 4 is moderately severe, minus 3 to 4 is severe, and greater than minus 4 is extreme drought. The Dust Bowl era of the 1930's peaked near minus 6, the 1960's reached minus 5, and 1998 well into 1999 fluctuated between minus 4 and minus 5. Cumulative precipitation deficits from July 1, 1998 to August 19, 1999 ranged from 14-20 inches of precipitation or 42 percent below normal and the second driest 12 month period since records have been kept in the Washington D. C. area. The low precipitation also tied records for the least amount of snow in a winter with less than .1 inch for any measurable snow fall except for a short 6 inch blizzard on March 8, 1999. The drought was aggravated by the second longest streak on record of 90<sup>0</sup>+ days (18) from July 22 until August 8. The drought was broken by tropical storms Dennis and Floyd in September.

### C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

### D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report
3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates

In May 2001, the refuge began a fluorescent bulb-recycling program. Pre-paid cartons for used bulbs were purchased. As the cartons are filled with used bulbs, the cartons are mailed to a vendor for disposal.

#### 5. Research and Investigations

Refuge biologist Joe Witt completed five years of bald eagle surveys along the shoreline of the Potomac River, between Fort Washington, MD and Aquia Creek, VA. The field study was designed to examine the distribution and abundance of the bald eagle and to assess what effects potential human impacts or activities might have on their distribution and abundance. In general, there has been approximately a three fold increase in the overall number of eagles observed along the shoreline since the beginning of the surveys in 2000 (see Figure 1). The relationship between their distribution and the availability of perching and foraging habitat suggest that the eagles are avoiding developed areas along the river.



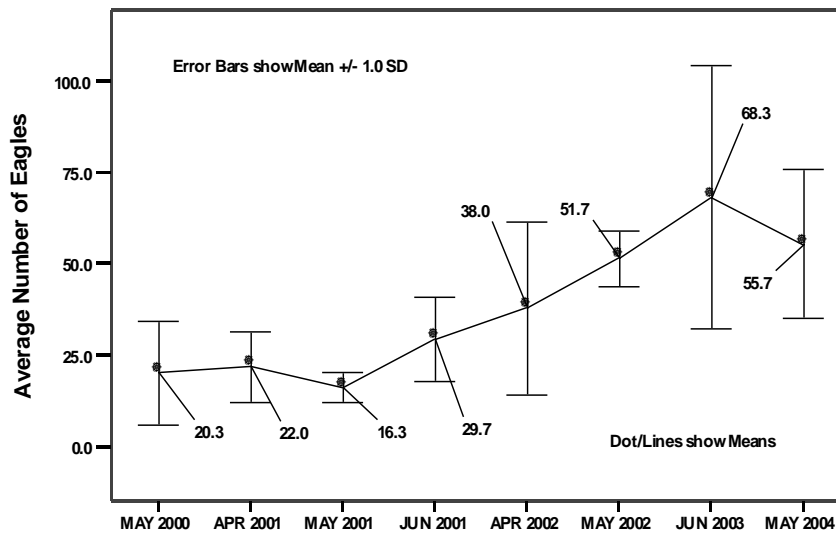


Figure 1. The relative abundance of the Bald Eagles (adults and immatures) along the Potomac River shoreline between Fort Washington, MD and Aquia Creek, VA, based on the average number of eagles observed within each survey period between 2000 and 2004. Each census period (i.e., survey mean) consisted of three earlier morning boat surveys within three distinct sections of the river, which included separate observations on each side of the river using two observers and a driver.

Between 2000 and 2003, Terry R. Creque completed his research on the snake community at Mason Neck in 2001 for his doctoral degree from George Mason University. Similarly, John Orr completed his research on the microhabitat use for the eastern worm snake (*Carphophis amoenus*) at Mason Neck for his Master's degree in 2003 from George Mason University. See attached summary table from their work at Mason Neck.

Summary of the snakes caught or identified from 1999 to 2004 by graduate students from George Mason University.

	Totals for 1999				Totals for 2000				Totals for 2001-2004			
Species /Genus	Area A 1999	Area B 1999	Area C 19992	Capture plus Sightings*	Area A 2000	Area B 2000	Area C 2000	Capture plus Sightings*	2001 Capture plus Sightings	2002 Capture plus Sightings	2003 Capture plus Sightings	2004 Capture plus Sightings
<i>C. amoenus</i> (SAY) (Eastern worm snake)	27	1	3	32	27	3		30	43	48	30	34
<i>T. sirtalis</i> (Eastern garter snake)	4		1	6	2	2		4	13	9	1	1
<i>T. sauritus</i> (Eastern ribbon snake)		5	3	3			5	5		1		1
<i>C. constrictor</i> (Northern black racer)	10	1	6	21	6	6	1	13	7	9	6	7
<i>E. obsoleta</i> (Black rat snake)	6		1	8	2			2	3	2		
<i>N. sipedon</i> (Northern water snake)	0	7	10	10			12	12	1	4		8
<i>D. punctatus</i> (Ringneck snake)	3			10	4			4	2	3	6	4
<i>A. contortrix</i> (Northern copperhead)	1			1	2			2		3		
<i>L. triangulum</i> (Eastern milk snake)	1	16	2	3								
<i>V. valeriae</i> (Eastern earth snake)					4			4	1	3	2	1
<i>S. dekayi</i> (Northern Brown Snake)					3			3		2		
<i>H. Platrihinos</i> (Eastern hognose snake)						1		1				
Totals	52	16	26	94	50	12	18	80	70	84	45	56

Staff coordinated studies and surveys-

Deer spot-lighting  
Great Blue Heron nest survey  
Great Blue Heron reproductive survey  
Bald Eagle reproductive surveys  
Bald Eagle roost use at refuge and park  
Forest interior/upland bird point count surveys  
Amphibian egg mass survey  
Bald Eagle surveys along the Potomac River

Collateral surveys by permit on refuge-

Christmas Bird Count - Audubon Society  
MAPS station (n=2) - Institute for Bird Populations (IBP)  
Wood Duck banding (Fall) - Virginia Department of Game & Inland Fisheries  
Snake community survey - George Mason University graduate  
Mid-winter raptor survey - The Raptor Society  
Deformed frogs surveys at Mason Neck - Ecological Services, CBFO  
Bluebird Nest Box - Larry Brindza

6. Other - Nothing to Report

E. ADMINISTRATION

1. Personnel

- Greg Weiler, Refuge Manager, GS-13, EOD 11/23/97 from WASO Arlington VA, PFT
- Daffny Jones, Fish and Wildlife Biologist, GS-7, EOD 11/16/03 from Back Bay NWR Virginia Beach VA, PFT, GS-9 effective 5/16/04
- Stacie Allison, Administrative Assistant, GS-7, EOD 8/10/03, PFT
- Joseph Witt, Wildlife Biologist, GS-11, EOD 6/20/98 from BLM, PFT
- Marty McClevey, Outdoor Recreation Planner, GS-7, EOD 1/17/99 from NPS, PFT
- Steve Boska, Maintenance Worker, WG-8, EOD 8/26/90, PFT
- Christopher Revis, Maintenance Worker, WG-5, EOD 7/29/01, PFT

2. Youth Programs

The Sri Sathya Sai South Bethesda Center Young Adults of Northern Virginia cleaned up shoreline along Occoquan Bay near the Mason Neck Maintenance Shop on April 14. About 15 individuals from this youth organization cleared about ¼ mile of shoreline and filled a pickup with tires and trash.

Steven Andrews of Troop 964, completed the requirements for the rank of Eagle by constructing a raised turnpike along a 50 foot section of the Woodmarsh Trail. Utilizing geogrid and geotextiles, he supervised the encapsulation of gravel in the fabric to create a barrier between the saturated soil and the trail tread. The project remedied a situation in which hikers were walking

off the trail to avoid a chronically wet area. Stevens work restored the trail and protected adjacent areas from being impacted by foot traffic.

### Boy Scouts FY 2002

Jeff Sone, an Eagle Scout candidate completed the requirements for the rank of Eagle by supervising the cleanup of the Environmental Education Pavilion on Sycamore Road. Jeff had two work tables built for use by school groups, cleaned the floor, and coated the bare wood with waterproofing. He also constructed 3 sections of post and rail fence at the parking lot.

Ian McCormack completed his requirements for Eagle by removing the pressure treated edge boards from the entire length of the Great Marsh Trail. This project entailed removing the boards from both sides of the trail for a distance of  $\frac{3}{4}$  mile. A contractor repaved the trail and rebuilt the observation platform in late 2002. The removal of these boards was necessary to move the paving project ahead on time.

Scout Troop 964 of Dale City, Virginia failed to meet the parameters of an exclusive trail maintenance agreement and was notified that future maintenance work would be opened to any Scout or Troop. The troop did not respond to the notification and has not provided any Scouts for volunteer activities.

### 3. Other Manpower Programs

In FY2002, an AmeriCorps crew provided assistance for trail and maintenance projects at Mason Neck and Occoquan Bay. Staged at another site, the crew made special trips to the refuges to provide for a variety of opportunities and experiences.



In FY2003, the Mason Neck State Park hosted a resident Youth Conservation Corps program. Plans were made to utilize the crew to complete projects on the wildlife refuge as well. No specific projects were completed this Fiscal Year but the Refuge was invited to provide opportunities in upcoming years. Maintenance Worker Steve Boska served as the liaison for this coordinated effort.

An AmeriCorps crew was assigned to the Mason Neck State Park and Mason Neck National Wildlife Refuge. Joint projects were conducted to more efficiently utilize the crew. Maintenance Workers Steve Boska and Jamie Revis coordinated the refuge projects which included the demolition of a 150 foot long board walk on the Woodmarsh Trail that had been damaged a decade ago by a hurricane and was now sinking into a tidal marsh. This old walkway had become unsafe and was closed at the time of demolition. The crew also constructed 900 feet of new trail to bypass the boardwalk crossing. Prior to the construction of the new trail section, Archeologist Victoria Jacobson and Outdoor Recreation Planner Marty McClevey surveyed the route and completed an assessment of the site utilizing a series of shovel pits to rule out the presence of cultural resource sites. McClevey also worked with Boska and Revis to coordinate the construction of a wood boardwalk spanning an intermittently wet area. (See Interpretive Trails for more details.)

In February of 2004, Prisoners from Prince William County assisted in the removal of trash and debris from the western edge of the Great Marsh. Outdoor Recreation Planner Marty McClevey flagged routes through the woods along the Woodmarsh Trail to direct an operator of an all terrain vehicle to navigate to the pick up sites at the marsh. Maintenance Worker Steve Boska assisted in coordinating the final removal of the trash. The trash was the result of the storm surge from hurricane Isabel in 2003.

#### 4. Volunteer Program

In FY2001, volunteers assisted at the managed deer hunts and range qualifications. Howard Greenhouse and Andy Monje assisted with the range work.

In FY2002, the volunteer program was coordinated by Outdoor Recreation Planner Marty McClevey. Volunteers participated in great blue heron nest counts, eagle surveys, deer spotlight counts, trail maintenance and managed deer hunts. Andy Chaney, a 16 year old, assisted with archeological work as well as trail clearing. Andy assisted Marty McClevey and archeologist Victoria Jacobson with the screening of material at the Little March Creek Native American site. Andy also assisted in the removal of downed trees along the Woodmarsh Trail.

Bill Mitchell and Stephanie Boska assisted at the deer hunt station during the managed deer hunts. Stephanie and Chris Leon helped collect fees and issue permits at the hunter orientation sessions held at the Occoquan Bay National Wildlife Refuge.

Outdoor Recreation Planner Marty McClevey continued his collateral duties as the Volunteer Coordinator for the Complex in FY2003. Some issues have arisen since the formation of the

Friends of the Potomac River Refuges related to the recruitment, training and liability of volunteers. McClevey presented information to the Friends group at one of its monthly board meetings. One specific conclusion drawn from these issues is the need for better communications between the refuge staff and the general public. Marty McClevey will move ahead with the creation of a volunteer newsletter for the 2004 or 2005 Fiscal Year.

Over the past decade, volunteers have conducted bald eagle surveys on the Mason Neck National Wildlife Refuge and Mason Neck State Park. It was determined this year that enough data had been collected that this function could be suspended for a time. Current security concerns, since the September 11, 2001 terrorist incident called for a tighter control on individuals accessing closed portions of the refuge. The most viable solution was to suspend the surveys, analyze the data and then determine what specific portions of the refuge needed to be monitored and how frequently these areas needed to be accessed.

Refuge Volunteer Larry Brindza continued his work on the blue bird trail at the refuge and state park. Larry has also been certified as a Monarch butterfly surveyor. He has compiled statistics on monarchs migrating through the region and the Mason Neck and Occoquan Bay National Wildlife Refuges, for several years.

Volunteers conducted the annual great blue heron nest count in February of 2003. This survey is conducted on a Saturday morning and takes about 3 hours to complete. Approximately 20 volunteers assisted with the survey.

The Defense Intelligence Agency Rod and Gun Club (DIA Rod and Gun Club) assisted with spotlight counts in September of 2002.

Bill Mitchell served at the 4 days of deer hunting by operating the deer check station. Stephanie Boska helped at the check station. Stephanie also assisted at the Occoquan Bay managed hunts and has learned the procedures for processing the deer and recording the tagging information. Both Stephanie and Bill have been invaluable in their service for these managed hunts.

In FY2004, volunteers assisted in a variety of tasks on the refuge. They conducted eagle surveys along the Potomac River, counted great blue heron nests, banded birds, monitored wood duck and blue bird nest boxes, assisted with deer spotlight counts and helped with the maintenance of roads. Volunteers Lou Davis and Paul Dodd frequently assisted the maintenance staff on projects. Bill Mitchell and Stephanie Leon returned to assist at the managed deer hunts by running the deer check station.

## 5. Funding

<u>Fiscal Year</u>	<u>Appropriation</u>	<u>Source</u>
2001	\$552,600	1261
2001	\$ 85,000 (Deferred Maint.-Vehicle)	1262
2001	\$548,600 (Construction – Trail and parking area)	
2002	\$585,900	1261
2002	\$ 35,000 (Deferred Maint.-Vehicle)	1262
2003	\$627,500	1261
2003	\$ 2,000 (Fire)	
2004	\$583,300	1261
2004	\$211,000 (Radios,Tractor, Vehicle, SAMMS)	1262
2004	\$ 3,400 (Fire)	

Revenue sharing checks were delivered to Fairfax County and Prince William County from fiscal year 2001 through 2004.

## 6. Safety

On August 2, 2001 when attaching equipment to the Deere 1250 tractor, Maintenance Worker Boska dislocated his left thumb. He applied first-aid and did not require further medical attention.

In 2003, topics of discussion at Safety briefings included viewing a video on vehicle backing. In April 2003, one Americorp worker was injured when a small limb struck the worker's leg. First aid consisting of ice packs was applied to the injury. On the next day maintenance worker Boska checked with the Americorp Team Leader. The injured worker had returned to work with no lost days. In May 2003, maintenance worker Boska briefed Refuge staff with a Safety Talk concerning Lyme Disease. Outdoor Recreation Planner McClevey provided information to Refuge volunteers.

In June 2004, the Refuge staff reviewed a video titled "Hearing Conservation. What do you want to hear?" A group discussion followed the viewing of the video.

## 7. Technical Assistance – Nothing to Report

## 8. Other Items

Meetings and Travel Sessions for refuge personnel not listed elsewhere:

Refuge Biologist Witt attended the National Wildlife Refuge System Wildlife Workshop from May 15<sup>th</sup> through May 19<sup>th</sup> of 2000 at the National Conservation Training Center, in Shepherdstown, West Virginia.

In 2002, Refuge Biologist Witt attended Refuge Compatibility Training at the National Conservation Training Center on February 20<sup>th</sup> and 21<sup>st</sup> and Fire in Ecosystem Management in Tucson, Arizona from April 23<sup>rd</sup> through May 1<sup>st</sup>.

From February 10<sup>th</sup> through the 14<sup>th</sup> of 2003, Refuge Biologist Witt attended Introduction to Fire Effects in Brown Mills, New Jersey.

Maintenance worker Revis attended the Maintenance Academy conducted June 24<sup>th</sup> until 28<sup>th</sup>, 2003 at the National Conservation Training Center, in Shepherdstown, West Virginia.

From November 3<sup>rd</sup> through November 5<sup>th</sup>, 2003 Maintenance Worker Revis successfully completed Heavy Equipment Safety Training. The course was conducted at Blackwater NWR, Maryland. Maintenance Worker Revis received training for operations of the Hydro-axe, farm tractor, and bulldozer. On November 4<sup>th</sup>, 2003 Maintenance Worker Boska received in Hydro-axe operation training.

From November 12 until November 19, 2003, an Americorp team worked on the Refuge. Tasks included clearing the Refuge's fire roads and boundary trails. The team also assisted with preparations for the Mason Neck Deer Management Hunt.

On January 14<sup>th</sup>, 2004 Maintenance workers Boska and Revis completed Fire line Safety Refresher Training.

In March 2004, Maintenance Worker Revis completed Chainsaw Operator Safety Training. Refuge Manager Weiler, Assistant Manager Jones, and Refuge Biologist Witt attended the Region 5 Refuge Manager/Biologist joint meeting at National Conservation Training Center from March 22-16, 2004.

In April 2004, Maintenance Workers Boska and Revis successfully completed Safety Training for Rough Terrain Forklift Operation.



## F. HABITAT MANAGEMENT

### 1. General

Only support activities were accomplished at Mason Neck in FY 2001 as focus was put on getting Occoquan Bay NWR up and running. As programs settle at Occoquan Bay, staff will be able to take a more balanced approach to all the complex units.

Located along the Potomac River and Occoquan Bay, the Refuge consists of 2,277 acres of the over 8,000 acre Mason Neck peninsula and consists of the following habitat types:

<u>Habitat</u>	<u>Acres</u>
Woodland	1,883
Wetland	364
Grassland	15
Brush	10
Administrative areas (i.e. buildings, parking lots)	5

Habitat management has primarily been directed at providing relatively undisturbed habitat for the bald eagles and maintaining and creating habitat for wintering and migrating waterfowl and other resident wildlife populations.

### 2. Wetlands

The wetlands are split between the broad Great Marsh fronting onto the Potomac in the arch of the boot shaped peninsula and High Point Creek, an impounded drainage system near the toe of the peninsula. The Great Marsh has several meandering creek mouths and is dominated by wild rice, spatterdock, and other open marsh species favored by a constant freshwater tidal exchange. High Point Creek is narrow, protected by forested promontories except at the narrow impounded (large dike) mouth with little exchange of water beyond storm surges and runoff.

High Point Creek was drawn down during the past four years during the late spring as much as it could be to provide better foraging opportunities for young eagles and great blue herons.

In 2001, maintenance worker Boska bulldozed a small basin area on Anchorage Road near the old gate at the end of the Anchorage as an experimental vernal pool for amphibians. This area will be compared to study areas Thomas Jefferson High School for Science and Technology has at vernal pools along High Point Road and near the trail heads.

On October 31, 2002, associates from Waterway Surveys and Engineering, Ltd., Virginia Beach, Virginia, completed grade surveys at the proposed breakwater sites along the High Point shoreline.

### 3. Forests

Upland hardwood forest (1,883 acres) is the predominant vegetative type on the refuge and the peninsula. The dominant deciduous species in the upland forest include: white oak (Quercus alba), chestnut oak (Quercus prinus), red maple (Acer rubrum), American beech (Fagus grandifolia), and yellow poplar (Liriodendron tulipifera). Virginia pine (Pinus virginiana) and loblolly pine (Pinus Taeda) constitute the principle conifer species. Thirty-six species of trees have been recorded on the refuge.

### 4. Croplands – Nothing to report

### 5. Grasslands

Only about 15 acres of grasslands remain on the refuge. During colonial times and up to the early 1900's, numerous acres were used for agriculture (crops and dairy) and logging. Natural succession has converted the grasslands into hardwood forests leaving basically a monotypic habitat of mixed hardwoods with small patches of conifers. Most of the refuge has not been logged in 40 to 50 years and some areas have stands of 100+-year-old trees.

Grassland management activities are directed at rotational and cyclical mowing of designated fields. One-third (approximately two acres) of the environmental education field is mowed annually as part of a three-year rotational strip-mowing program designed for educational interpretation and habitat diversity. Maintenance Workers Boska and Revis mowed the Environmental Education field and the old dairy area at the end of Sycamore Road to maintain these grasslands. Other areas mowed included the weather station field near the maintenance shop and the old home site at the end of Anchorage Road. In addition to mowing, Maintenance Workers' Boska and Revis limbed trees and cut back sweet gums that encroached into the areas.

### 6. Other Habitats – Nothing to Report

### 7. Grazing – Nothing to Report

### 8. Haying – Nothing to Report

### 9. Fire Management – Nothing to Report

### 10. Pest Control – Nothing to Report

### 11. Water Rights – Nothing to Report

## 12. Wilderness and Special Areas – Nothing to Report

## 13. WPA Easement Monitoring – Nothing to Report

### G. WILDLIFE

#### 1. Wildlife Diversity

Mason Neck is located just 18 miles south of our Nation's capital and is adjacent to a rapidly growing metropolitan area where habitat is constantly being altered and degraded. The Refuge is located at the end of a boot-shaped peninsula which extends out into the Potomac River and provides a relatively remote area of upland forests and freshwater marshes which are frequented by a diverse group of wildlife species. The monotypic mature upland hardwoods, freshwater marshes, and small grassland areas which comprise the Refuge habitat hosts over 211 species of birds, 31 species of mammals, and 44 species of reptiles and amphibians.

#### 2. Endangered and/or Threatened Species

The primary objective for which the refuge was established was to protect essential nesting, feeding, and roosting habitat for bald eagles (Haliaeetus leucocephalus). There are three primary areas of nesting activity on the refuge: the Great Marsh, the heronry and Potomac River shoreline near High Point, and the middle and upper reaches of High Point Creek. Other significant areas in the vicinity of the refuge are the roost and a nest site on Kanes Creek in the neighboring state park, a nest and roost on the north border of the refuge and Gunston Hall, a nest site between Gunston Manor and Hallowing Point communities, and a nest site on undeveloped land on the north portion of the peninsula.

The eagles abandoned the nest near the heronry and moved out in along the shore between Anchorage and High Point. Though active for three years, the nest in the heronry seemed in conflict with the herons (one eagle nest to 1,500 Great Blue Heron nests) and the High Point Creek Nest so the move was not surprising. In 2002 the occupied breeding territory was abandoned and has not been occupied for the last three years.

As in the past since the Great Marsh eagle nest's was discovered in 1994, portions of Woodmarsh Trail beyond Eagle Point that come close to the nest site were closed mid December and reopened in late June earlier July when public use would be less of a disturbance.

#### 3. Waterfowl

Although Mason Neck is out of the mainstream of the Atlantic Flyway, the refuge, as part of a series of small marshes along the Potomac River, provides migrating and wintering habitat for dabbling and diver ducks. Over 20 waterfowl species have been reported on the refuge. Tundra swans and snow geese, while not numerous, are new additions to the list and have become

regular winter visitors in the last six years. Rafts of canvasback, lesser and greater scaup, ruddy ducks, mergansers, and buffleheads are frequently seen offshore.

#### 4. Marsh and Water Birds

Historically, marsh bird surveys were conducted at Mason Neck and Occoquan Bay National Wildlife Refuges in June and July of 1999 using two passive listening intervals (initially a 0-5 minute period and 1-minute final period) and in-between a broadcast response (playback) portion. Only two species of colonial waterbirds (Great Blue Heron and Great Egret) have been identified on the refuge. The population size of the colony in the southwest corner of the refuge has grown from 30 nests in 1979 to over 1,500 in the last few years, during this time the reproductive potential for the herons has varied considerable (Figure 2) and maybe related to weather related factors in May (refuge biologist's manuscript is being reviewed for publication).

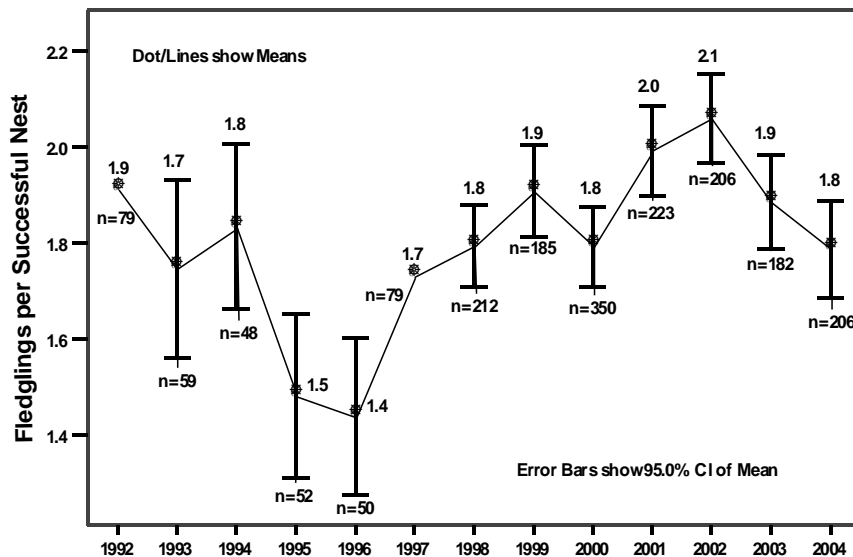


Figure 2. Annual productivity for the Great Blue Herons at Mason Neck NWR in Lorton, Virginia, based on observations of fledglings per successful nest. Point estimates for 1992 and 1997 were based on estimates compiled in the field, resulting in an inability to calculate and report an appropriate 95% confidence interval (C.I.).



**Mason Neck National Wildlife Refuge nesting territories and productivity for the bald eagle, between 1990 and 2004.**

**The definitions for occupancy and reproduction in the text and the table were based upon definitions by Postupalsky (1974).**

Territory/ Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Great Marsh I					Occu	Unk	2	2	1	Active /Unsu	2	2	1	2	3
Rookery + River								2	Active /Unsu	1	2	Active /Unsu	Unoc	Unoc	Unoc
High Point Creek	3	1	2	1	1	2	Unsu	2	Active /Unsu	1	Active /Unsu	Occ	Unk Moved nest	2	1
Great Marsh II											Occu	Occu	Single adult	Unoc	Unoc

Occu = Occupied Breeding Territory but no nesting behavior observed; Active = Nesting behavior observed

Unoc = Unoccupied site; Unsu = Active site but no fledges produced; and Unk = Unknown

5. Shorebirds, Gulls, Terns, and Allied Species – Nothing to Report

6. Raptors – Nothing to Report

7. Other Migratory Birds

Volunteer Larry Brindza continued to operate the refuge's blue bird trail. He maintains nest boxes on Sycamore Road, Anchorage Road, the field and shop yard near the end of High Point Road, and on the High Point Creek Dike. Blue birds use most of the boxes but he regularly reports chickadees, prothonotary warblers, and tree swallows also using the boxes.

8. Game Mammals

The deer are in relatively good health with multiple sets of twins and few piebald's being observed occasionally. Information about the whitetail deer hunt is listed in the public use section.

Deer Spotlight Data Comparison

Year	1 <sup>st</sup>	2 <sup>nd</sup> survey	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup> survey	6 <sup>th</sup>	Total Counted	Average for Total Deer
1993	14	9	6	25			54	13.5
1994	10	17	13	14			54	13.5
1995	2	7	10	13			32	8
1996	6	19	6	21			52	13
1997	13	15	13				41	13.7
1998	14	17	10				41	13.7
1999	10	14	15	31	30	35	135	22.5
2000	16	31	18	24	12	42	143	23.8
2001	9	8	11	20	24	7	79	13.1
2002	13	12	14	19	21		79	15.8
2003	19	17	32	28			96	24.0
2004	16	15	18	14			63	15.75

9. Marine Mammals – Nothing to Report

10. Other Resident Wildlife

Wild turkey are often seen near the end of Sycamore Road, the end of Anchorage Road and along High Point road near the head of Little Marsh Road indicating the population seems healthy and is spread throughout the refuge.

11. Fisheries Resources - Nothing to Report
12. Wildlife Propagation and Stocking - Nothing to Report
13. Surplus Animal Disposal - Nothing to Report
14. Scientific Collections - Nothing to Report
15. Animal Control - Nothing to Report
16. Marking and Banding

The Institute for Bird Populations from Port Reyes Station, California continued operating two Monitoring Avian Productivity and Survivorship (MAPS) stations on Mason Neck, having started in 1995. The refuge is involved as part of a partnership with nearby Ft. Belvoir letting the refuge piggyback on a military program "Monitoring Avian Productivity and Survivorship (MAPS) Program on Military Installations and other Federal Lands in the Midwest and East: ...". The refuge's stations are Mason Neck 1 located on Sycamore Road near Old Barn Road and Mason Neck 2 on Little Marsh Road northwest of the High Point eagle nest. Volunteers, trained by IBP, operate the stations and conduct an average of 8 banding sessions from May until August each summer. Birds are mist-netted, identified, measured, and banded.

A report generated June 30, 2003, based on five stations in the area and seven years of data, indicated decreasing trends for five species of neotropical birds (Acadian Flycatcher, Red-eyed Vireo, Wood Thrush, Louisiana Waterthrush, and Hooded Warbler). However, from an individual station perspective, the stations at Mason Neck indicated that two of the five species were showing increasing trends. The Acadian Flycatcher showed meaningful positive trends ( $P > 0.10$ ) at both stations, with the Wood Thrush showing significant positive trends ( $P < 0.05$ ) at the MAS1 site. In addition, both the White-eyed Vireo and the Carolina Wren showed significant increases ( $P < 0.05$ ) at the MAS2 site, while the Ovenbird showed significant trends ( $P < 0.01$ ) at MAS1.

17. Disease Prevention and Control – Nothing to Report

## H. PUBLIC USE

### 1. General

In FY2001, most of the public use energy was aimed at the Occoquan Bay National Wildlife Refuge. Trail work was beginning to take a higher priority through the volunteer program and specifically through Eagle Scout projects. The refuge continued to offer managed deer hunts on four days and required qualifications on specific days at specific ranges. The number of hunters has been declining, but those that participate have greatly valued the opportunity.

Yvonne Schultz remained as the lead Outdoor Recreation Planner. Marty McClevey continued to coordinate the Volunteer Program and Museum Property. New locks from the Best Lock

Company have simplified the use of keys and the staff's ability to navigate from one building to the next or one gate to the next without thinking about which key to use.

Archeologist Victoria Jacobson conducted shovel pit tests at the proposed expansion area of the Great Marsh Parking lot. Nothing of significance was found and so it is hoped that the parking lot expansion and the renovation of the Great Marsh Trail will take place next fiscal year.

West Nile Virus became an issue this year as more and more dead crows were being found in the region, all testing positive to the virus. Refuge staff was encouraged to collect any crows found at Occoquan Bay or Mason Neck.

Applications for both Occoquan Bay and Mason Neck were submitted to the Chesapeake Bay Gateways Network. The Network links together through maps and advertising and tourism, sites with Chesapeake Bay themes. It is hoped that both refuges will be accepted into the Network.

In FY2002, Yvonne Schultz and Marty McClevey carried on the public use program for the Complex. Yvonne was the lead Outdoor Recreation Planner and Marty McClevey was responsible for the Volunteer Program, Museum Property and the day to day operations at the Occoquan Bay NWR.

The Great Marsh Trail was renovated this year. A Boy Scout removed the boards lining the trail to clear the way for a repaving. The Refuge staff demolished the old overlook platform. A contractor paved the trail from the main parking lot to the overlook. The overlook platform was completely rebuilt. On August 17, 2002, the trail was officially reopened and dedicated as the Joseph V. Gartlan Jr. Great Marsh Trail. Joe Gartlan, a former State Senator and advocate for individuals with disabilities was the proud guest of honor at the dedication ceremony. The trail is now fully accessible. The dedication was attended by 40 people including State Senators Ticer and Whipple and Delegate Albo. Speakers at the event were Congressman Tom Moran, State Senator Puller, Supervisor Highland and Joe Gartlan.

On August 1, a microburst from a strong thunderstorm struck Mason Neck and Occoquan on a straight line from the Great Marsh Trail to the mouth of the Marumsco Creek. Large oak trees were toppled along the Great Marsh Trail and the Woodmarsh Trail. Frantic work by the refuge staff enabled both trails to be reopened in a couple days.

Archeologist Victoria Jacobson, conducted a survey of the future parking lot expansion site at the Great Marsh Trail. While on the same trip, she made a visit to the Little Marsh Creek archeology site and discovered that a large portion of the protected area had been excavated as part of a dike project. Apparently the significance of the site was not communicated to the refuge staff. Most did not know of the existence of the site. Victoria returned a few weeks later and began three days of screening and meticulous measuring of the impacted area. Marty McClevey and volunteer Andy Chaney assisted her through this long process.

The Mason Neck Refuge is part of the Chesapeake Bay Gateways Network. This Network links together sites through the Chesapeake Bay watershed under different themes and functions. Occoquan has been a candidate since the program began. It is hoped that that site will join the



Network next Fiscal Year. Marty McClevey submitted an update on the Mason Neck and Occoquan Refuges. Marty attended a workshop at George Washington's Birthplace in Westmoreland County Virginia on December 19, 2001. The workshop covered the process for writing an acceptable grant proposal for the Network.

Marty McClevey attended a Visitor Services workshop at the National Conservation Training Center in December of 2001. This training provided valuable information on counting visitors, creating brochures, designing public use projects (blinds, trails, museum exhibits).

In FY2003, many new improvements were completed or planned this Fiscal Year for the Mason Neck Refuge. Greater emphasis was placed on the accurate documentation of visitation to the refuge through the use of trail counters. Work continued on the renovation of the Great Marsh Trail, now known as the Joseph V. Gartlan Jr. Great Marsh Trail. Major improvements were completed along the 3 mile long Woodmarsh Trail. Construction began on a 3 mile paved bike trail along the length of High Point Road. Outdoor Recreation Planner Marty McClevey began to research replacement panels for the interpretive kiosk at the Great Marsh trail head and the two kiosks located along the

Woodmarsh Trail. Interesting incidents were reported at the refuge during the year. Through the summer months on warm days, as many as 20 small boats could be seen anchored off shore near the Little Marsh Creek dike. On several occasions, in spite of posted warning signs, individuals were found walking or sun bathing on the sandy shores of the refuge. While making a patrol of the Woodmarsh Trail in early June, Marty McClevey found two individuals walking off of the trail. Inquiring as to what they were doing, he found that they had instructions sheets obtained from an internet site detailing the location of a "letter box" stashed just off the Woodmarsh Trail. This information was passed up to the Regional Office to inform the Visitor Services staff of a new visitor activity on refuges. A message was sent to the internet site indicating that placing items in caches at the refuge was not permitted and entering closed portions of the refuge to place the cache or access the cache also was not permitted. The refuge staff agreed to keep a closer watch on these activities at Mason Neck and Occoquan Bay.

In FY2004, the long neglected public use program grew substantially with the editing and distribution of a revised Mason Neck brochure. Centennial funding allowed for the design of new interpretive panels at the Great Marsh and Woodmarsh Trails. The installation of trail counters has greatly improved the means of calculating annual visitation to the refuge. The Joseph V. Gartlan Jr. Great Marsh Trail has been in a construction phase for a number of years. The parking lot expansion project should have been completed in Fiscal Year 2003 but because of contractor problems is still incomplete as of the end of this accounting year. New prefabricated concrete restroom units were installed at the Great Marsh and Woodmarsh Trail heads. These units are quite a step above the old portable toilets. The High Point bike trail was completed this year and will be dedicated in April of 2005. This trail allows hikers, joggers and bicyclists to travel from Gunston Road to the State Park Visitor Center on a paved path.

Refuge Manager Greg Weiler has cooperated with the land managers of the Neck to construct a kiosk along Gunston Road to orient visitors to the many special sites and touring opportunities on the Mason Neck peninsula.

## 2. Outdoor Classrooms-Student

In FY2002, Thomas Jefferson High School in Fairfax, Virginia, conducted two visits to the refuge to allow the students to monitor vernal pool sites. The coordinator of the outreach, Chip Randal has been very excited about the work completed by the students and the opportunity to use the refuge.

In FY2003, Marty McClevey began discussions with representatives of the Alexandria Seaport Foundation which had requested a permit to use portions of the Woodmarsh Trail for Environmental Education. This organization proposed bringing hundreds of kids from northern Virginia school districts to the refuge to conduct wetland ecology, collect plant and water samples and net fish from the Great Marsh. The organization's proposal was given great consideration but was found to be potentially too impacting to the areas in which they desired to conduct their activities. Their permit has been put on hold until the Fall of 2004.

Thomas Jefferson High School cut back its field trips to the refuge due to the sniper incidents. Some classes did manage to conduct salamander studies.

In FY2004, Thomas Jefferson High School has used the refuge to conduct advanced science projects. Four times a year, students survey specific vernal pool sites for salamanders as well as to test new computer monitoring devices in nest boxes.

## 3. Outdoor Classrooms-Teachers – Nothing to Report

## 4. Interpretive Foot Trails

From March 31<sup>st</sup> until April 9<sup>th</sup>, 2003, a nine person Americorp Team accomplished extensive renovation and improvements to Woodmarsh Trail. Under the leadership of Maintenance Workers' Boska and Revis, the team removed a 100 foot dilapidated footbridge. The bridge, damaged in 1996 by Hurricane Fran, was no longer safe and required removal. The team replaced the bridge; rerouted portions of Woodmarsh Trail; constructed trail benches; and spread gravel and woodchips on the trail. The team cleaned the small pond located at the Environmental Education Field. When several days of rain hampered trail maintenance, the team directed their efforts to several indoor projects. One project was installing plywood paneling in the Automotive Building.



AmeriCorp Team with Maintenance Workers Boska and Revis

On April 3 2004, the Refuge participated in the 16<sup>th</sup> Annual Potomac River Watershed Cleanup. Despite the chilly, drizzly weather, more than 30 volunteers removed over 54 bags of trash, 82 tires and a variety of other debris varying from empty steel drums to corrugated roofing. In just a few hours, a difference was made on the Mason Neck Peninsula. Together the community and the refuge became a united force against the trash problems of the Potomac watershed. Maintenance workers' Boska and Revis worked with volunteer Joe Chudzik in removing trash from Great Marsh. Fairfax County provided two dumpsters and two "gaiter" type units. Court ordered community service workers also provided support.

In FY2001, greater emphasis has been given to correcting trail erosion on the Woodmarsh Trail. An Eagle Scout project corrected a problem where the trail was continually inundated. Marty McClevey obtained maintenance manuals from the Forest Service to provide guidance in future trail work.

In FY2002, extensive work has been completed on the Great Marsh Trail. This trail, once a compacted gravel path, is now a fully accessible trail. Six benches have been installed along the  $\frac{3}{4}$  mile route and the overlook platform has been rebuilt with ample room for groups to view the marsh. The trail is now called the Joseph V. Gartlan Jr. Great Marsh Trail. New interpretive panels are in the design phase.

A Boy Scout Troop had signed an agreement to provide foot patrols and maintenance on the Woodmarsh Trail. Marty McClevey coordinated the agreement in 2000. However the troop failed to meet the required once a month patrol or follow up on maintenance work. McClevey nullified the agreement and is now seeking another troop to assist with the maintenance of the trail. Woodmarsh has long been neglected and is in need of water control projects, re-routing, the removal of old signs, the placement of new guide signs. Much of the information on the trail

brochure is inaccurate or obsolete. It is hoped that corrective work will take place in Fiscal Year 2003.

In FY2003, a contractor began expansion work on the parking lot of the Great Marsh Trail. This work will double the size of the current lot and provide for two entrances/exits. The installation of light poles for night time security and the placement of automatic gates is also part of the contract package.

The Archer Company obtained the contract to construct a 3 mile, paved bike trail from the Mason Neck State Park visitor center, along High Point Road to Gunston Road. The trail will be dedicated in 2005.

The Woodmarsh Trail underwent extensive renovation work with the removal of a 150 foot, dilapidated board walk and the construction of 900 feet of new trail. The new trail section will take hikers from the mid-point of Hickory Pass to Eagle Point. Americorps enrollees removed the old bridge and constructed the new trail. They also constructed a short section of board walk across an intermittent wet area. The removal of the bridge and the rerouting of trail will greatly enhance the visitors hiking experience while eliminating a section of trail plagued by seasonal inundation. Marty McClevey determined the new route, assisted with the archeology and supervised the Americorps with construction of the in-sloped boardwalk approaches. New trail map signs will be ordered in 2004 and 2005.

In FY2004, the refuge manages the Woodmarsh and newly renovated Joseph V. Gartlan Jr. Great Marsh Trail. These two trails provide spectacular views of the 350 acre Great Marsh. Both trails have undergone some construction and renovation. The parking lot of the Great Marsh Trail has been expanded and automatic gates and night lights installed. New toilet units were installed at both trails this year. Designs for new interpretive panels were completed and approved this year and are scheduled to be installed in Fiscal Year 2005. Both trails will have trail maps with rules and regulations and trail descriptions. Newly installed trail counters have shown that about 500 individuals walk each of these trails each month.

A three mile bike trail was completed through the State Park and refuge this year.

This trail will provide a comfortable walk or ride for cyclists and hikers but will increase the maintenance workload. The trail is scheduled to be dedicated in April of 2005.

## 5. Interpretive Tour Routes – Nothing to Report

## 6. Interpretive Exhibits and Demonstrations

On April 21, 2001, the refuge staff participated in the Elizabeth Hartwell Earth Day at Mason Neck State Park. Yvonne Schultz organized a nice display on endangered species and on the refuges of the Complex. Tours to the great blue heron colony were provided for the public and facilitated by biologist Joe Witt.

In April of 2002, the refuge staff participated in the annual Elizabeth Hartwell Earth Day at Mason Neck State Park. This event was well attended. Biologist Joe Witt provided van tours of the Little Marsh Creek heron colony.

In FY2003, Marty McClevey was invited to participate in a special bald eagle event at the National Zoo in Washington, D.C. on July 4, 2003. The purpose of the event was to publicize the opening of a new bald eagle exhibit at the Zoo. National Wildlife Refuges from across the country were invited to participate by setting up exhibits and providing information to the public on how to view bald eagles at their refuge. McClevey represented the Mason Neck National Wildlife Refuge. Over 3000 people visited the new permanent eagle exhibit on that day. Contacts from this event were responsible for a number of calls from the public related to visiting the Mason Neck Refuge.



The Refuge staff also participated in the spring Elizabeth Hartwell Earth Day Event at Mason Neck State Park. Refuge volunteers assisted in staffing an exhibit. The refuge's 15 passenger van was used to carry visitors to the Little Marsh Creek Heron Colony.

On April 24, 2004, the refuge staff participated in the annual Elizabeth Hartwell Earth Day at Mason Neck State Park. The refuge operated a table display with information on the refuges of the Potomac River Complex, specifically focusing on Mason Neck and bald eagles. Eagle masks were crafted for the kids to wear to become honorary bald eagles. The refuge utilized its 15 passenger van to conduct tours of the great blue heron colony on Little Marsh Creek. Approximately 25 individuals took the tour. Refuge biologist Joe Witt greeted each tour group and explained the purpose of the refuge and the uniqueness of the heron colony. The Friends

Organization set up a table next to that of the refuge to promote membership. The event ran from 11 A.M. to 6 P.M. Patricia Wood and Otto Swoboda assisted at the refuge display.

#### 7. Other Interpretive Programs – Nothing to Report

#### 8. Hunting

In FY 2001, the refuge facilitated 4 days of hunting. The dates were November 27 and 29 and December 11 and 12.

Four days of hunting were carried out at Mason Neck in FY2002. Hunt scouting occurred on November 17 and 18 under the supervision of Steve Boska and Yvonne Schultz (collateral duty Law Enforcement). The first two days of hunting took place on November 26 and 27 followed by hunts on December 10 and 11.

In FY2003, the refuge continued its managed deer hunts. Hunt orientation was divided between the Mason Neck State Park Visitor Center and the Occoquan Bay Visitor Contact Station. The refuge is exploring the possibility of using the Northern Virginia Community College – Woodbridge Campus as a possible site for conducting the orientation sessions. Members of the DIA Rod and Gun Club assisted with the initial and final mailings for the managed hunts. Due to the reduction in the number of hunters and the lowered hunter success rate after three days of hunting, it is anticipated that next year's hunt will be reduced to three days.

In FY2004, the refuge and State Park agreed to reduce the number of hunt days from 4 to 3. This was due to the declining number of hunters and the reduced productivity on the last day of the hunt. Orientation sessions for the hunts were held at Northern Virginia Community College, Woodbridge Campus. A number of volunteers assisted with the orientation sessions. An emphasis was place on tagging deer in the field with the DMAP tag before traveling to the check station. Concerns were expressed over the activities of some hunters who were conducting deer drives which reduced the hunt experience for the independent hunters. Overall, the hunters have expressed gratitude for the hunts and how well the hunts are organized.

**Table 1b. Combined Shotgun Harvest, 1995-2003.**

<u>Year</u>	<u>Does</u>	<u>Bucks (antlered/button)</u>	<u>Totals</u>
1995	25	34 (28/6)	59
1996	15	40 (25/15)	55
1997	62	51 (28/23)	113
1998	44	53 (38/15)	95
1999	34	60 (34/26)	93
2000	53	56 (33/22)	109
2001	48	44 (27/17)	92
2002	41	31 (23/8)	72
2003	48	67 (46/21)	115
2004	39	60 (54/ 6)	99

9. Fishing – Nothing to Report

10. Trapping – Nothing to Report

11. Wildlife Observation

In FY 2003, the improvements made on the Joseph V. Gartlan Jr. Great Marsh Trail greatly enhanced the popularity of the trail and the wildlife viewing opportunities.

12. Other Wildlife Dependent Recreation – Nothing to Report

13. Camping – Nothing to Report

14. Picnicking – Nothing to Report

15. Off-Road Vehicling – Nothing to Report

16. Other Non-Wildlife Oriented Recreation

In FY2004, letterboxing and geocaching continue to remain concerns to the refuge staff.

These unapproved activities have been reported in the region and on the refuge.

Individuals participating in letterboxing often violate regulations and enter closed areas to add a sense of thrill to the secretive caching.

17. Law Enforcement

After serving 10 years as a Collateral Refuge Officer, Maintenance Worker Boska requested his Law Enforcement Commission be terminated effective October 29, 2002.

On June 13<sup>th</sup>, 2003 Maintenance Workers' Boska and Revis found a 10-foot Jon-Boat along the High Point Creek shoreline. The two took the boat to the maintenance shop compound. Later that day, Outdoor Recreation Planner McClevey contacted the U.S. Coast Guard and obtained the boat owner's name and phone number. On June 16<sup>th</sup>, 2003, a Maryland commercial fisherman claimed his boat.

While Refuge Biologist Witt was on duty on July 4, 2003, one adult and two boys (12-13 years of age) were apprehended poaching turtles along High Point Creek with 16 turtle traps. The boat and traps were confiscated and stored in the maintenance yard. The poacher pleaded guilty and his 19 foot Carolina Skiff was return to him in the fall of 2004.

Maintenance worker Boska saw a damaged Honda Civic parked in the Woodmarsh Trail Parking Lot. On January 30<sup>th</sup>, 2004, he contacted the Fairfax County Police Department. The owner of the Honda Civic had reported the vehicle as stolen. Fairfax County Police made arrangements for towing of the vehicle.

In FY 2003, several trespassing incidents were reported. The area of most concern is from the State Park boundary to the Little Marsh Creek dike. This portion of shore is well signed and several verbal warnings were given over the summer.

One couple was found snow shoeing up Tree Stand Road. They indicated they were going cross country to the Great Marsh Trail. This road is well posted with AREA CLOSED signs.

The refuge had its first incident of “letter boxing”. Marty McClevey found a couple wandering off the trail in search of a hidden cache of “stuff”. It was later found that the refuge was posted on the Letter Boxing web site.

In FY2004, incidents of trespass along the shore and within closed portions of the refuge’s interior were common. The looting of a bottle dump was reported this year. The dump site is located on a main road way. Evidence of digging and sorting of bottles is quite common.

Outdoor Recreation Planner Marty McClevey came upon an individual attempting suicide on Gunston Hall property, adjacent to the wildlife refuge. The incident started when he came upon a vehicle parked off the main road and immediately suspected that an individual was relic hunting. However he quickly found that the vehicle belonged to an individual suffering from Traumatic Stress Syndrome. Fairfax Police assisted in the safe resolution to the incident. The individual was found to be in possession of a nail gun. This brought awareness to the refuge staff that at all times you must be aware of your surroundings and prepared to handle most any kind of situation.

#### 18. Cooperating Associations – Nothing to Report

### I. EQUIPMENT AND FACILITIES

#### 1. New Construction

In September 2001, the refuge received a Kelly Klosure building. The construction of this building was planned for the summer of 2002. On July 19, 2002, approximately 28 cubic yards of concrete was used for the pad of the Kelly Klosure building. Kevin Jacobs of the Regional Office and several members of the maintenance crew from Mason Neck State Park assisted refuge maintenance workers’ Boska and Revis with the project. The construction of the building began in late August. The building was completed in mid September 2002.

In January 2003, rainy weather hampered the plans to enlarge the Great Marsh Trail Parking Lot. Refuge staff decided to re-open the trail. Once construction began the Refuge would again close the trail. In late August 2003, the contractor resumed their work on the parking lot.





In June 2004, the maintenance shop compound expansion continued. The expansion added 3780 square feet to the compound. Contractors installed two concrete precast vaulted toilets, one at the Great Marsh Trail Parking Lot, the other at the Woodmarsh Trail Parking Lot. The two units replaced older porta-lets that were more than 15 years olds.

## 2. Rehabilitation

In June 2001, in anticipation of repairs to the High Point Creek Dike, Maintenance Worker Boska completed extensive repairs to Little Marsh Road. Three pull-offs were graveled, culverts were cleared, and several portions of the road received stone, gravel, or grading. These improvements provided easier access to this area recently included into the deer management hunt area.

During March 2002, the refuge staff demolished and removed the deteriorating overlook at the end of Great Marsh Trail. The project had its problems. Removal of the old footings required the use of a jackhammer. To help with transporting the debris from the demolished overlook down the  $\frac{3}{4}$  mile foot trail, the refuge purchased a small utility trailer. Efforts with improving the Great Marsh Trail continued. In May 2002, Refuge staff moved all the materials needed for constructing the new overlook to the worksite and installed curbs in the parking lot. A contractor

constructed the overlook. Later maintenance worker Boska and Refuge Manager Weiler used geotextile fabric to prevent and minimize erosion at the overlook site.

On October 28<sup>th</sup>, 2002, the Refuge closed Great Marsh Trail. The trail closure was necessary in preparation for the parking lot expansion project. This project included installation of two automatic gates, lighting, and constructing another driveway. The two driveways would permit an entrance route and an exit route.

### 3. Major Maintenance

In October 2001, Refuge staff prepared the Great Marsh Trail for paving. Old trail borders comprised of pressure treated lumber required removal, as did demolishing the overlook. A few trees required removal, as did some stumps and large roots.

Due to the non-compliance of Fairfax County Department of Health guidelines, County inspectors did not approve a well drilled in July 2000. In November 2001, the well drilling contractor returned and re-capped the existing well drilled in July 2000 and re-drilled a new well. The County collected and tested water samples from the new well. Testing results showed the water as unsafe for drinking and the County recommended the water supply be disinfected. The well contractor was notified of the situation and returned to disinfect the well. Subsequent tests of water samples showed the water to be free of coliform. Since the water was from the same aquifer additional water quality analysis was not required.

During 2002, repairs to three vehicles were necessary. The 1992 Chevrolet S-10 pickup truck driver's side window did not work and required repair. A leaking rear pinion seal for the 1998 Dodge Ram utility truck was replaced. The 1988 Dodge Ram pickup truck broke down and required a tow to a nearby garage. The alternator required replacement.

In August 2003, an electrical contractor routed the electrical line to the Kelly Building. Maintenance Workers Boska and Revis prepared the site for installation.

On the afternoon of September 2003, Hurricane Isabel moved through northern Virginia. Although winds were greatly reduced from the level 5 storm it had previously been, rain and storm surge combined to create significant flooding across the area. The refuge had numerous trees down across roads and trails and extensive flooding in low lying areas.



Refuge Manager Greg Weiler looks over the damage cause by the storm surge of Hurricane Isabel.

The prior hurricane caused extensive damage and the little marsh dike had been repaired and raised two feet. Isabel's storm surge topped the dike by over two feet. Some erosion occurred on the dikes' inland side. The damage could be easily repaired with about 400 tons of rip rap. The overlook platform on the Woodmarsh Trail was heavily damaged and will have to be removed. A dumpster washed up through the marsh and was sitting a few yards from the Great Marsh overlook platform.

#### 4. Equipment Utilization and Replacement

The refuge's boats continued to receive maintenance and replacement. In February 2001, the refuge received a new 16-foot Sea Ark jon-boat, trailer, and 50 horsepower Mercury motor. Later in the summer maintenance workers' Boska and Revis completed painting and repairing the older jon-boat and boat trailer. The lights on the trailer used to haul the Boston Whaler

required replacement. The 14 foot V hull utility boat, 25 horsepower outboard, and trailer were transferred to Blackwater NWR.

In the spring of 2001, the tires on the Ford 900 dump truck needed replacement. Recapped tires were purchased as replacements. As a preventative measure to decrease flat tires, a self-sealing compound was placed in all tires of the dump truck. No flat tire repairs were needed for the remainder of the year. Later in the year, the shift lever valve required replacement.

The Caterpillar dozer hydraulic lines required replacement. In June 2001, one hydraulic line broke. Since all lines were original equipment on the dozer, maintenance worker Boska began replacing these old lines. During the same time, the hydraulic hoses on the Kubota 7100 tractor also failed and required replacement.

In June 2001, the 1984 Yamaha ATV required repairs to several problems. These items included replacing the starter cable, tail light, choke cable, and shift lever. Compression ring service was also needed.

In July 2001, the Refuge purchased a 6' x 10' on road utility trailer. The trailer was needed to transport items too small for the 14' Hazelwood trailer, and for transporting items between Mason Neck and Occoquan Bay NWR's.

The center roller for the tracked Dresser 124 Loader (on loan from Patuxent NWR) required repairs. The equipment was transported to a repair facility and the repairs were completed.

In August 2001, the refuge received a 2001 Ford 550 series dump truck and snowplow. This vehicle replaced a 1982 Dodge 350 dump truck. Due to engine failure, the 1982 Dodge became non-operational in September 1998.

In late September 2001, the refuge received a Tufline tandem disc. The disc was purchased for preparation of fire lines at Occoquan Bay NWR. The Refuge received a manufacturer's safety recall notice for the 2000 Ford F-150 pick-up truck. The windshield wiper motor required replacement. Later in the year, a short circuit in the lighting system required repair. This repair was not covered by the manufacturer's warranty. The Refuge purchased a walk behind leaf blower, two pole chain saws, and a hand held leaf blower. The items were needed for increased trail maintenance at Mason Neck and Occoquan Bay NWR's. The Refuge also purchased shop power tools, i.e., a pressure washer and a framing nailer.

In February 2002, the Deere 7200 tractor needed repairs. Pressure could not be found in one hydraulic line. An adjustment to the control linkage and a replacement of an "O" ring corrected the problem.

In June 2002, Maintenance Worker Boska transported a surplus Allis-Chalmers 840, AC840 loader from Back Bay National Wildlife Refuge, in Virginia Beach, Virginia. The loader will be used for various projects. Prior to the receipt of the loader, the Deere 1250 tractor was used as a loader or the Refuge would either rent a loader or borrow a loader from another Refuge. In July 2002, the Refuge replaced the rear tires on the AC 840 loader.

In July 2002, solid foam replaced the fluid ballast in the tires of the Deere 1250 tractor. Use of the foam filled tires eliminated any possibility of tire puncture while mowing.

In August 2002, the Wajax slip-on pumper required repairs to the carburetor and pump. The metal fuel tank rusted and caused sediment to clog the carburetor. Maintenance Worker Revis replaced the metal fuel tank with a plastic fuel tank. The old and outdated backpack type pumps were also replaced.

In January 2003, the AC 840 loader and the Caterpillar D4 dozer required battery replacements. In November 2003, the Deere 7200 tractor needed the batteries replaced.

In March 2003, the maintenance shop's 275-gallon heating oil tank required replacement. The tank was more than 20 years old and a small leak was located on the bottom of the tank. Fuel loss was minimal. Maintenance Worker Boska used the fuel spill containment kit and fuel absorbent pads to contain the heating oil.

In August 2003, the Allis-Chalmers 840 loader required repairs. Hydraulic lines, brake shoes, starter, and the emergency braking system required replacement.

In November 2003, the complex received a Deere LX277 mower and Deere snow thrower. This equipment will be used for snow removal on the Great Marsh Trail, High Point Trail, and at the Occoquan Bay NWR.

In July 2004, the Refuge received a Deere 5520 four-wheel drive tractor with loader, a 10-foot flex-wing Deere HX15 mower, 24-horse power Bobcat wood chipper, and a Danuser posthole digger.

## 5. Communications Systems

In November 2001, a communications representative did an on-site visit and accomplished maintenance checks on all radios. Minor repairs were accomplished on site. Two vehicles, the 1998 Dodge utility truck and the 1992 Chevrolet S-10, required repairs at the communications representative repair facility.

The station received \$93K in 2004 to upgrade radio systems. An MOU was developed between the refuge and BLM Meadowood to put a radio repeater and tower on their property which would be used jointly by both agencies. Currently the tower is in place but the radio equipment has not been received.

## 6. Computer Systems

In July 2001, a computer for maintenance worker Revis was placed at the shop. No on-line computer capability existed at the maintenance shop. Maintenance worker Boska received e-mail at the Refuge headquarters. Volunteer Chris Leon replaced the hard drive and installed a CD writer on one computer at the maintenance shop.

On July 22<sup>nd</sup>, 2002, Maintenance Workers' Boska and Revis completed IT Security Awareness Training.

In September 2002, on-line capability came into effect at the maintenance shop. Maintenance staff no longer traveled to Refuge Headquarters to review e-mail or obtain access to the Internet.

The office converted from dial up modem to satellite service in September of 2003.

In January 2004, technicians installed a satellite system at the maintenance shop. The dial-up service was too slow to support the planned start-up of the SAMMS Reporting System.

New computers were installed in December of 2004 at the Refuge Office.

## 7. Energy Conservation

The Refuge continued with an aggressive recycling program by transferring most scrap metals, glass, and paper to recycling facilities. Discarded tires that washed up along the Refuge's water boundary continued to be a problem not only as trash but also as increased paperwork and disposal fees imposed by the county. In November 2002, the first pick up of used motor oil under the "closed loop" program occurred.

## 8. Other – Nothing to Report

# J. OTHER ITEMS

## 1. Cooperative Programs

In January 2003, the Virginia State Parks, District 6 Manager requested Maintenance Worker Boska to transport a hay-wagon from Appomattox, Virginia to the Mason Neck State Park. The hay-wagon was transported on the 10 ton Custom trailer.

In FY2003, an insect defoliated large stands of American holly (*Ilex opaca*) on the Mason Neck Peninsula. It is uncertain what species caused the extensive damage.

On February 18<sup>th</sup>, 2004, Maintenance Workers Boska and Revis traveled to Norfolk Naval Base, Virginia and received over 50 pieces of surplus furniture. They transported the furniture to Mason Neck State Park and delivered the furniture in housing used by each team. . Both the Refuge and the State Park have Americorp and YCC encampments.

In FY2004, five Hurricanes left their mark on the State and this particular region. Hurricane Charlie hit Virginia on August 14. Reaching the State as remnants, this storm created some problems in the Suffolk area and our region escaped major damage. Hurricane Gaston came in as a tropical depression on August 30 causing extensive damage in the Richmond area (over 10 inches of rain in 10 hours). On September 8 the remnants of Hurricane Frances hit the region prompting a state of emergency. On September 17 the remnants of Hurricane Ivan struck the region hard. Tornadoes were reported all over Northern Virginia. Hurricane Jeanne struck on

September 25. As with Ivan, there were numerous reports of tornadoes in the region. The Occoquan Refuge was closed early on two occasions because of the threat of tornadoes. Weather alert radios were purchased for use by the public use staff to provide early warning to severe weather.

2. Other Economic Uses – Nothing to Report

3. Items of Interest – Nothing to Report

4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

K. FEEDBACK – Nothing to Report



OCCOQUAN BAY NATIONAL WILDLIFE REFUGE  
Woodbridge, Virginia

INTRODUCTION

Located about 20 miles south of Washington, D.C., Occoquan Bay National Wildlife Refuge is a 644 acre parcel on a peninsula bordered by the sandy river shoreline of Belmont Bay, Occoquan Bay and the tidal flats of Marumsco Creek. It lies approximately 4 miles east of the fall line separating the Coastal Plain from the Piedmont Uplands Province, resulting in alluvial terrace deposits underlain by sand, silt, clay, and gravel in a massive eastward-thickening wedge of sediments. "Occoquan" is derived from a Dogue Indian word meaning "at the end of the water". Adjacent to the confluence of the Occoquan and Potomac Rivers, tributaries to the Chesapeake Bay, the location made this area a stopover site for migrant birds as well as a natural site for Native American and colonial settlement.

Occoquan Bay NWR is made up of two parcels formerly known as the Woodbridge Research Facility and the Marumsco National Wildlife Refuge. The research facility, which served as an Army communications in the 1950's and 1960's and a top secret research center in the 1970's and 1980's, closed its operations in September of 1994 under the Base Realignment and Closure Act (BRAC). Local citizen initiatives and political support led to the signing of legislation by President Clinton in September 1994, authorizing transfer of the entire facility to the U.S. Fish and Wildlife Service. The site was formally transferred in June, 1998. Marumsco NWR had been established in 1973 when the Army exceded the creek p0ortion of the property. Recombining the two parcels with the new name Occoquan Bay gave the site more community recognition and management capability.

As a classified Army site, the Woodbridge Research Facility was closed to the public. Mowed and cleared for electronics testing, the site contains a diversity of grassland and wetland plant species unusual in the heavily developed Potomac region. Its diverse habitats support a correspondingly high number of wildlife species, particularly migrant land and waterbirds and grassland nesting species. Wetland habitats cover about 50 percent of the sire, and include wet meadows, bottomland hardwoods, open freshwater marsh, and tidally influenced marshes and streams. About 20 percent of the unit is upland meadows, with the remaining vegetated areas consisting of shrub and mature or second growth forest. The refuge is managed to provide early successional habitats and appropriate wildlife dependent recreational opportunities, to educate visitors on the results and benefits of habitat management for wildlife, and for the enjoyment and benefit of people.

The Refuge is located in Prince William County, one of the fastest growing counties in the Commonwealth of Virginia, with more than 241,000 residents. The county consists of 222,305 acres of land and 51,200 acres of water. It is comprised of single family and multi-family residential homes, agriculture, parks and open space, and government, commercial, and



industrial facilities. Employment is high, predominately in government and government-associated services or activities.

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## A. HIGHLIGHTS



## B. CLIMATIC CONDITIONS

The refuge during the past five years has had a variety of weather conditions, for example in 2002 it was one of the drier years on record while in 2003 was one of the wettest. Although, was not as bad as 1999, when the refuge was in record drought condition and for the east coast as part of El Nino climate condition. Referred to in local news papers as the “Great Drought of ‘99”, it was the area’s third consecutive summer of drought and the third worst of this century in northern Virginia Evaluated by the Palmers Drought index that compares the amount of water entering the soil through precipitation and the amount leaving through evaporation, this was the worst drought since 1969. By the index, zero is normal, minus 2 to 3 is moderate, minus 3 to 4 is moderately severe, minus 3 to 4 is severe, and greater than minus 4 is extreme drought. The Dust Bowl era of the 1930's peaked near minus 6, the 1960's reached minus 5, and 1998 well into 1999 fluctuated between minus 4 and minus 5. Cumulative precipitation deficits from July 1, 1998 to August 19, 1999 ranged from 14-20 inches of precipitation or 42 percent below normal and the second driest 12 month period since records have been kept in the Washington D. C.

area. The low precipitation also tied records for the least amount of snow in a winter with less than .1 inch for any measurable snow fall except for a short 6 inch blizzard on March 8, 1999. The drought was aggravated by the second longest streak on record of 90<sup>0</sup>+ days (18) from July 22 until August 8. The drought was broken by tropical storms Dennis and Floyd in September.

#### C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

#### D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report
3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates – Nothing to Report
5. Research and Investigations

Refuge biologist Joe Witt completed four years of grassland bird surveys at the refuge and plans on completing a summary report during FY2005. The field study was designed to examine the distribution and abundance of the neotropical birds and to assess the potential impacts of mowing and burning. In general, he found fifteen species (see Table A in the Wildlife Section) that either showed a positive or negative response based on either their general location in the fields, prescription, and or simply they were effected by the year the survey was completed (that is, stochastic annual variation within the population). The relationship between their distribution and prescription suggest some species are affected by a variety of influences (proximity to edge, severity or completeness of the burn, yearly variation within the grassland, and prescription.

#### Staff coordinated-

Grassland bird point count surveys  
Territorial mapping surveys  
Quantitative grasslands vegetation surveys  
Marsh bird surveys (herons & egrets)  
Deer spot-lighting  
Marsh Wren surveys at all three refuges  
Bald Eagle surveys along the Potomac River

#### Collateral surveys by permit-

Mid-winter raptor survey - The Raptor Society  
On-going (monthly) bird surveys - Prince William Natural Resources Council

Christmas Bird Count Occoquan Bay NWR - Prince William Natural Resources Council  
Deformed frogs surveys - Ecological Services, CBFO  
Bluebird Nest Box - VA Bluebird Society  
Plant Monitoring - Virginia Native Plant Society (Elaine Haug & Nicki Stanton)  
Invertebrate survey/Bio Blitz - Smithsonian Institute  
Woodcock survey - Fairfax Audubon Society  
Dragonfly/Butterfly Survey - Kim Hosen and James Waggener

6. Other - Nothing to Report

## E. ADMINISTRATION

### 1. Personnel

See Mason Neck NWR – Staff shared as part of Potomac River NWR Complex.

### 2. Youth Programs

On November 1, 2000, Outdoor Recreation Planner Marty McClevey met with Ora Dixon and other Fish and Wildlife Service employees at Camp A.P. Hill in Caroline County, Virginia, to discuss the role of the Service at this year's Boy Scout Jamboree. Marty passed on a summary of the meeting to Regional Volunteer Coordinator Jennifer Palaia.

The Refuge continued its involvement with the Adopt a Refuge Program. This program enables girls from the DC metro area to come to a refuge and complete work projects and learn about plants and wildlife. Deborah McCormack was this year's liaison between Fairfax Audubon and the Service. Three events were held in the fall and three in the spring. The number of girls at each event varied but generally 30 to 100 girls participated in the program. The Council Program Coordinator Karen Brown indicated that the program was so successful that she had to turn troops away for each scheduled event. Planned projects included the collection of eastern gamma grass seed and planting of trees for screens, erosion control, and shoreline cleanup. Marty McClevey coordinated this program for the refuge. Much work was involved in planning the events, planning meaningful work projects, setting up, monitoring for safety issues, and providing a fun and worthwhile experience for the girls. This has been the longest and most productive outreach for the Girl Scout Council and the longest lasting Audubon Refuge Keepers initiative in the United States. To celebrate International Migratory Bird Day in May of 2001, a letter was sent to each troop registered for that month's event. The letter asked that each troop adopt a migratory bird from the suggested list and then present information on the bird in what ever form they wanted at the event. Most of the troops adopted a bird. One troop adopted the common yellowthroat, a warbler. The girls were absolutely amazed when they were able to see their bird on the refuge that day. Troops were encouraged to participate in work project independently of the big events. One Saturday in July of 2001, Troop 2162 came out to walk over the compound site that had recently been covered with top soil. Deanna Jennings and her girls picked up trash, debris and pipe from around the site. This enabled us to move ahead with disking the area and planting native grasses. Sandy Spencer, the SCEP biologist supervised a group of Scouts in the cutting of phragmites along the shore of the refuge. Rachelle Price,

Leader troop 3881, went the extra mile in supporting the Adopt a Refuge Program. She coordinated a Junior badge event and had her girls create a display for the program. This display was used at the Eco Expo in Greenbelt, Maryland to promote the refuge and the Adopt a Refuge outreach.

On February 24, 2001, Marty McClevey attended special youth protection training at Carl Sandburg School. This training was sponsored by the Boy Scouts and was mandatory for all adults attending the Jamboree. The training was extremely beneficial and provided a good background for his work with the Girl Scouts.

Scout Dan Miller completed his required work for the rank of Eagle by supervising Scouts in the installation of cable gates at intersections around the refuge. Dan's work resulted in the ability of the refuge staff to control traffic around the main parking lot of the Refuge.

Mike Wheeler completed the requirements for Eagle by removing the barbed wire topper from 1,800 feet of chain link fence along Deephole Point Road to provide a less obstructed view of the bay and he supervised the clearing of 300 feet at the refuge entrance.

In February of 2002 Outdoor Recreation Planner Marty McClevey was invited to address high school students at Osbourn Park High School in Manassas Park, Virginia to provide information on specific projects that they can participate in at the Occoquan Bay National Wildlife Refuge. This invitation was due to the work of high school senior Heather Farmer who chose to create a link between the school and the refuge as a Girl Scout Gold Award project. She received the award later that year. Heather's work involved providing email communications with the students in which she would then link them to a project and presenting information in the science classes for all high school grade levels. Students from the school provided assistance with supervising Girl Scouts in the planting of emergent aquatic plants in the newly created pond on the old Army Compound site. McClevey supervised the students in measuring the pond, selecting specific plants, determining sites on the refuge from which to obtain plants and then supervising the overall scout project workday. One of the troop leaders, Terry Rabot, Special Assistant to the Deputy Director of the Fish and Wildlife Service, attended the planting workday with her girls. She sent a letter to Regional Director Mamie Parker complementing the refuge's role in coordinating this worthwhile project in which the scouts used "real tools" and got really wet.

### Girl Scouts

#### Adopt A Refuge:

This program was continued from 1999, 2000 and 2001. In order to coordinate the Volunteer Program and the 2002 Youth Fishing event, Marty McClevey turned the Adopt a Refuge program over to lead Outdoor Recreation Planner Yvonne Schultz. Three of these events for Junior Girls were held (March 2, April 6 and May 4, 2002). Specific badges were emphasized through these events: Wildlife, Your Outdoor Surroundings, Plants and Animals, Earth Connections, Eco Action and Plant Life.

Yvonne Schultz and one of the Senior Girl Scouts (Kersti Smedley) were interviewed and video taped for the new Linking Girls to the Land video. Kersti Smedley set up a display on prescribed fire for the girls to view.

Senior Girl Scout Heather Farmer a student at Osbourn Park High School in Manassas, Virginia has worked to facilitate the involvement of students from her school in research and volunteer work projects at the Occoquan Refuge. She took on this task as a means of attaining the prestigious Girl Scout Gold Award. Some of her accomplishments include coordinating a van tour of the refuge for students interested in senior research projects, assisting at three large Junior Girl Scout events, recruiting students to assist at these events as well as to provide assistance in the initiation of a pond establishment and vegetation project. Heather worked very hard to assist students in finding creative and viable research projects as well as to assist those just seeking community service projects. She was praised by her school coordinator for her enthusiasm and diligence in prodding students to look to the Wildlife Refuge as a means of gaining experience in biology.

Through the first half of 2002, Marty McClevey worked with Senior Girl Scout Kersti Smedley, to complete a Silver Award project on the refuge. This project consisted of taking before and after photographs at specific photo points on the site to document vegetation before and after burning and mowing. Kersti then used the information to create an interpretive display on prescribed fire. This display was used at public events and Girl Scout events. She began the project by determining photo points around the site. Using a 3 meter tall rod and a measuring tape, she took photos on particular compass bearings and at set distances from the plot's center point. The project was extremely beneficial in interpreting the before and after affects of fire.

Melanie Tarosky, a Senior Girl Scout, received a Silver Award for assisting Yvonne Schultz with the 2002 Junior Duck Stamp Competition. She mailed applications, sorted artwork and then helped facilitate the judging.

### Boy Scouts

Eagle Scout candidate Carl Diamond started met with Marty McClevey to work out the details on completing work for the prestigious Hornaday Conservation Award. Carl wrote a proposal in which he plans to document the locations of microstegium, Japanese stilt grass, around the refuge and then coordinate the removal of the plant at a specific location. Carl completed the requirements for the rank of Eagle through this project. McClevey attended and spoke at his court of honor on April 26.

Boy Scouts John Krukar and Carl Diamond completed work projects to fulfill the requirements for the rank of Eagle. Scout Krukar cut, hauled and installed cable gates at six road intersections in the eastern portion of the refuge. This work would serve to control visitors along the wildlife drive and in a portion of the refuge that would be opened for foot traffic in the next fiscal year. Scout Diamond is continuing his work towards the prestigious Hornaday Conservation Award. Carl mapped the location of Japanese stilt grass on the refuge and coordinated the removal of this plant from a one acre site along Shady Road.

Girl Scout Leader Kristi Smedley of Troop 982, worked with Refuge Outdoor Recreation Planner Marty McClevey in facilitating a Water Drop Patch (Environmental Protection Agency) event at the refuge. The October event was cancelled because of the sniper incidents but eventually was held on April 12 for Cadette and Junior Girls. Kristi and her Senior girls



organized a wildlife badge event for Junior Girls on May 11, International Migratory Bird Day, but the event was cancelled because of rain.

Four Audubon Refuge Keepers, Adopt a Refuge, events were held over the course of the year. The events were held on October 6, November 3, March 1 and May 3.

Karen Brown the program coordinator for the Girl Scout Council of the Nation's Capital, assisted Marty McClevey in organizing and holding a special Centennial Event on March 1, for Girl Scouts in the region. A small group of girls (14) from two troops attended the event which included the viewing a film of the Refuge System and a video taping session in honor of the System's Centennial.



The Audubon Refuge Keepers, Adopt a Refuge Program, which started in 1999, concluded this year due to a lack of interest and involvement by Fairfax Audubon Society. The Society's ARK leadership continually struggled to find naturalists and workers to assist with the events. Since its beginning in 1999, the program was extremely popular for Junior Troops. Over one thousand girls from the Girl Scout Council of the Nation's Capital participate in the four year program.

Outdoor Recreation Planner Marty McClevey obtained 5 used bicycles from the Prince William Police Department for use by Fish and Wildlife Service staff at the Boy Scout Jamboree at Fort A.P. Hill in Bowling Green, Virginia.

### *Generations Hunt*

The Virginia Department of Game and Inland Fisheries partnered with the Complex to facilitate a hunting day for youth at the Occoquan Bay NWR. The hunt was held on October 23. Twelve hunters 12- 16 years old, participated.

### *Fishing Event*

On Saturday May 31, 2003, the second annual youth fishing event was held at the Occoquan Refuge. The event targeted youth age 5-12 years with an emphasis on the Centennial. The event site was a 2 ½ acre pond (called Painted Turtle Pond) on the southwest portion of the refuge.

On May 29 and 30, two refuge maintenance workers mowed around the pond site and along the road shoulders. On May 30 refuge staff and three volunteers staged canopies, tables and chairs and completed final site preparations which included setting up a panel for an interpretive display and a sign to post sponsors of the event. In spite of the treat of thunderstorms overnight, most preparations for the event were completed that day.

Marty McClevey, Refuge Manager Greg Weiler and Biologist Joe Witt arrived between 7:30 and 8:00 and began coordinating volunteers to various stations at the pond and entry road. Volunteers started to arrive around 0800 with the majority checked in between 830 and 845.

Volunteers started registering kids at 0830 and continued up to 1 pm. Forty-nine registration forms were filled out through the course of the event. Though pre-registration of youth for the event was encouraged, 27 preregistered kids did not show up. Two volunteers, Donna Rae Dean and Patricia Wood staffed the registration from 8 to 1:30.

At 10:30 that morning a trenching crew working about a tenth mile from the refuge entry gate cut a gas main and caused an evacuation of the nearby business park and neighborhood. No traffic, foot or vehicle was allowed to the refuge. By that time we had 49 kids and 120 total participants.



Bill Mitchell, represented Lee Trolling Motor. He provided a commercial quality hotdog cooker and took care of food services.

Members of the Defense Intelligence Agency Rod and Gun Club assisted at the event by helping kids fish. Eight members of this organization participated. Wal Mart donated 240 cans of coke, 120 hotdogs, 104 bags of Frito brand chips and condiments.

Each child was given a photo (with fish), a certificate for participating in the event and a goody bag filled with a soft tackle box, Centennial items, creel bag and other fishing "stuff".

A specific display on the Centennial was set up at the pond with a table for information related to the refuge and Friends Organization.

Forty-nine kids participated in the fishing event. Most of these kids stayed for 3 hours. The majority of these kids registered the day of the event. Ninety percent caught a fish. The event was catch and release. The largest fish caught was a 2 pound, 13 inch large mouth bass. We estimate that in addition to the 49 kids, 75-80 individuals (parents, family members, visitors) attended the event. Volunteers from DIA Rod and Gun Club (8), the Friends Organization (2), Lee Trolling Motor (1), US Fish and Wildlife Service fisheries office (Bob Poss and Yvonne Hawkins) and other Refuge volunteers (6) assisted with the event. Volunteers donated 81.5 hours at an average of 4.5 hours per person.

#### *Boy Scouts of America*

Boy Scout Carl Diamond completed his final written report for the Hornaday Conservation Award. Carl completed a Japanese stilt grass eradication program at the refuge by supervising the weeding of an acre of woodlands, monitoring the site over time and monitoring and mapping the presence of stilt grass along the roads of the refuge. It is certain that Carl will be awarded the bronze award this year. Carl's proposal and write up was very technical and complete.

Eagle Scout candidate Brian Parks began his scout project at the Occoquan Refuge in March of 2004. Brian constructed a 3 car parking area for the banding station along with an 8 x 8 foot compacted gravel pad for a mobility impaired toilet at the station and 40 feet of post and rail fence. He supervised the construction of over 100 feet of accessible trail from the new station parking lot to the banding station. This has greatly enhanced the accessibility to the site by the banders and impaired visitors. Brian finished the project at the end of March, in time for the opening of the station for the spring migration. He and 14 scouts and 5 adults accumulated 118.5 hours of service.

#### *Girl Scouts of America*

Senior Girl Scout Marissa Moore created a 2 foot x 2 foot Linking Girls to the Land logo for use at the contact station and for special events. This logo represents a transition made between the previous outreach for Girl Scouting known as Adopt a Refuge and the new emphasis on Linking Girls to the Land. This Fiscal year was the last year in which the Adopt a Refuge program would be administered. Much conflict had occurred over the past six years with Fairfax Audubon, the

second partner of the triad of the Girl Scout Council of the Nation's Capital and the Fish and Wildlife Service. Fairfax failed in providing adequate staffing for the events and low quality environmental education opportunities. Fairfax also adamantly disliked any specific hands on work projects for the Girls. The work projects were hailed by the Girl Scout Council and the refuge staff as the most viable portion of the program. Linking Girls to the Land will now allow the refuge staff and the Girl Scout Council to provide any type of work effort or teaching effort as deemed appropriate.

Senior Girl Scout Sam Smith received approval for a Gold Award Project in which she would assist Marty McClevey with invasive plant work on the refuge and later coordinate the training of scouts and scout leaders. Sam will assist with a Japanese knotweed removal project sponsored by the Alliance for the Chesapeake Bay.

On October 25, 2003, a Girl Scout troop completed a cleanup of the shoreline at the refuge. The girls removed storm debris deposited by hurricane Isabel. Marty McClevey supervised the cleanup which included a safety briefing. The girls were amazed when a medical syringe was found along the shore.

Outdoor Recreation Planner McClevey and Assistant Manager Daffny Jones carried on discussions with FWS Girl Scout Coordinator Ora Dixon and representatives of the Girl Scout Council of the Nation's Capital and Doug Blankenship, Interior Coordinator of Take Pride in America, about a special event proposed for May of 2004. The discussions involved whether an event could be scheduled at the Occoquan Refuge to facilitate the signing of a new Memorandum of Understanding between the Department of Interior and the Girls Scouts of the USA. The proposal was dropped when the MOU could not be completed in a timely manner, nor could specifics of the agreement be worked out with the two parties. This would have been an exciting event for the refuge and the Fish and Wildlife Service.

An YCC crew assisted the maintenance staff with the removal of chain link fence from the perimeter of the refuge for about one week. The enrollees were part of a resident camp at Mason Neck State Park.

Marty McClevey exchanged information with Nancy Whitfield, Guidance/Career Counselor at Colonial Forge High School in Stafford County, Virginia. This exchange was to promote internships for students at the Occoquan Bay Refuge.

### 3. Other Manpower Programs

In FY2001, a teenager from Woodbridge was allotted community service work for vandalizing a sign at the refuge. His father was grateful for our assistance. The teen helped clear debris, place closed area signs and performed other tasks. He was a good worker.

In FY2002, an AmeriCorps crew completed projects at Mason Neck and Occoquan Bay. Five members of the crew were assigned to assist Outdoor Recreation Planner Marty McClevey in

clearing brush and low limbs from the perimeter of Painted Turtle Pond. The crew worked for 8 hours on this project.

In July of 2002, Sally Underwood, from Prince William County Social Services office, supervised a crew of about 17 young girls in clearing some Chinese lespedeza from two sites at the refuge. Two groups of girls worked for a total of 34 hours.

In FY2004, an AmeriCorps crew constructed a 20 x 20 foot gravel platform at the bird banding station to accommodate the tent used for the banding operation. This pad provides a much more suitable and dry work area for the banders.

An inmate crew from Prince William County worked with our maintenance staff for two weeks in August removing the chain link fence that had been flattened by hurricane Isabel. This was a very productive venture for the County and the refuge. An open invitation has been extended to the County for future work projects.

Rhohan Kraus-Anderson completed 100 hours of community service at the refuge by assisting with a variety of projects including the fence removal and placement of map locator posts along the walking areas.

#### 4. Volunteer Program

Andy Monje a professor of interior design at Marymount College and his grandson Robert Marsh, photographed the interior of the visitor contact station and made an accessibility assessment and utilizing a special interior design program, created virtual reality views of the center. Andy then provided recommendations on uses of rooms and layouts of exhibits. He created a tower design for an exhibit case which would contain an assortment of mounted birds while hiding an intrusive ceiling column.

Elaine Haug, a museum technician at the Smithsonian has continued to help at the refuge by collecting voucher plant specimens for the refuge herbarium. She has assisted with deer spotlight counts and eagle surveys.

ExxonMobil conducted a cleanup of the refuge on March 31, 2001. Approximately 80 employees and family members attended the workday. Exxon provided lunch for everyone. Crews finished primary shore areas including portions of the Marumsco Creek and removed trash from Higham Court and Dawson Beach Road.

Members of the Defense Intelligence Agency Rod and Gun Club assisted Biologist Joe Witt and Outdoor Recreation Planner Marty McClevey in setting up hunt stands for the first Occoquan Bay managed deer hunt. They provided outstanding support at the first youth fishing event by assisting kids at the pond. This club, under the leadership of Bernie Gately have greatly supported hunting and fishing at Occoquan and Mason Neck. Members attended special training for the fishing event, helped kids learn to fish, mailed hunt letters and set up hunt stands. Their work on the hunt mailings saved the refuge staff over 70 hours of work.

ExxonMobil Corporation conducted its annual shoreline cleanup on April 6, 2002. About 174 employees of Exxon, their families, refuge volunteers and members of the Prince William Natural Resources Council participated. Over 350 hours of service was provided in the cleanup effort. Marty McClevey coordinated the event for the refuge when Yvonne Schultz was called to facilitate the Girl Scout event held simultaneously. Several refuge staff assisted at the event by driving the refuge van as a shuttle, driving pickup and dump trucks to transport the trash bags. Exxon provided wash stations, portable toilets and a catered lunch for the event.

Refuge volunteers Bill Teetz, Donna LeFlore and Dan Brockwell surveyed the proposed auto tour route to provide feedback on potential tour stops, trouble areas and quality of wildlife observation. This information was used to address the final routing and opening of the wildlife drive (Fiscal Year 2003). Bill, Dan and Donna also installed a spotting scope at the gazebo for viewing wildlife on the river and grasslands.

Andrew Chaney, a high school student, assisted Marty McClevey on several projects at Mason Neck and Occoquan. He helped with deer spotlighting at Occoquan and completed the photo documentation of a collection of artifacts from the refuge. Andy volunteered over 50 hours at the two refuges.

The first annual youth fishing event was held at Painted Turtle pond on June 1, 2002. Volunteers from the Fraternal Order of Police (2), The DIA Rod and Gun Club (14), ExxonMobil (1), the Friends of the Potomac River Refuges (4), Refuge volunteers (5), Other US Fish and Wildlife Service employees (Fisheries Office, 2) participated in the event. These volunteers served at registration, food service, traffic control, helping kids' fish, and photography. Twenty-nine volunteers donated 159 hours of service for an average of 5.5 hours per person.

The Potomac River National Wildlife Refuge Complex has hosted the Junior Duck Stamp competition for the State of Virginia for almost a decade. Sonya and Alan Hagenberg helped facilitate the event by setting up the contact station and moving artwork between phases of the judging.

The volunteer program grew as more opportunities for public involvement came about through the publicized Centennial Celebration. One volunteer came on board in May of 2003 and continued to train along side the public use staff. This individual, Otto Swoboda, contributed several hundred hours of service as a gate greeter and by assisting at special events such as the refuge's managed deer hunts. Over the course of the fiscal year, 414 individuals contributed 1,821 hours of service in 7 activities. The category of Bird Banding was the activity with the greatest accumulated hours of service followed by Provide Visitor Services, which accumulated 607 hours. Volunteer maintenance was a new category, broken out of other activities such as Provide Visitor Services. Volunteers contributed 327 hours of labor for such work as cleaning vehicles, removing trash and construction. Most notable in the construction realm for the refuge was the installation of cable gates by boy scouts and the fabrication of a 10 foot long wheel chair ramp at the gazebo. Volunteers continued to be a vital part of the biological program not only in bird banding but also in assisting with vegetation surveys, bird transect surveys and deer spotlight counts. The refuge offered 4 days of deer hunting for the public. Volunteers from the Defense Intelligence Agency Rod and Gun Club assisted with the assembly and set up of



removable tree stands and stationary tripod stands. Members also assisted at each of the hunts. In May, 8 members assisted at our second annual youth fishing event. Outdoor Recreation Planner Marty McClevey presented the club's president, Bernie Gately, with a plaque recognizing their invaluable assistance to this year's youth fishing event and last years managed deer hunts.



On March 29, 2003, the ExxonMobil Corporation held its sixth annual shoreline cleanup on the refuge in April. Unlike previous cleanups, the ExxonMobil workers participated in shoreline cleanup work, an erosion control project and setting up the net arrays at the banding station. It was a rainy day and many workers told me they preferred to do clean up work rather than other volunteer tasks. We decided we would stick with the cleanup. Refuge volunteers assisted with the cleanup by distributing trash bags, monitoring the workers along the shoreline and circulating with refuge trucks to pick up bagged trash and transport it to the roll-off dumpster. Approximately 1.6 miles of shoreline was cleaned that day. This event always provides unique opportunities for the refuge staff to work alongside ExxonMobil employees, executives and general refuge volunteers. This interaction spawns great interpretive interaction. Exxon provided a dumpster, portable toilets, wash stations and lunch for the participants. Money from the previous year's cleanup was used to purchase a cedar gazebo.

Suzanne Miller continued her role as lead bander at the banding station. She contributed 240 hours of service to this effort. I also want to recognize the work of David Mitchell who assisted

Suzanne in this effort. I was extremely impressed by the quality and quantity of work performed by Suzanne and David and their all volunteer team of banders. In spite of rain, ankle deep water, muck and mud, more rain, flies, mosquitoes, bellowing tree frogs and even more rain, these folks performed highly technical and delicate tasks of catching, banding and releasing birds. They all have wonderful stories to pass on about these incredible creatures. Suzanne described getting bit by a grackle from one end (shock), while getting to see everything the bird had eaten for the past week from the other end (awe). A special thanks to David Mitchell, Joanna Taylor, Pat Lubbers, Barb Chambers, Randy and Beth Ritter, Gordon Knight, Liz Sellers, Bill Teetz, Tony Miller and Beverly Smith.

As part of the Centennial Celebration, each refuge was provided with a time capsule in which to deposit items of significance. We were fortunate to obtain the assistance of Terry Boone, an archivist from the Library of Congress to assist with our capsule. Terry provided us with advice on what to place in the capsule, and how to package each item to endure the 100 year sleep. Terry assisted ORP Marty McClevey in the final packaging of each item. She donated most of the acid free materials. We were extremely grateful for her expert assistance. A newspaper article on the Centennial Time Capsule was printed in the Potomac News newspaper.

Marty McClevey continued as volunteer coordinator for the Complex. Work continued on developing better communications and accountability in this program. Excel data entry files were updated and modified by Dan Brockwell and Donn LeFlore to better track hours of service and types of work completed. This was a major milestone in documenting volunteer activities and providing rewards for volunteers that have donated hours of service.

#### Reward scheme for Volunteer Program

25 hours	mug
50 hours	patch and decal
100 hours	hat
200 hours	logo pin
300 hours	windbreaker
400 hours	lunch sack or tote bag
500 hours	logo pin with rocker
750 hours	pen with logo
1000 hours	logo pin with rocker
1500 hours	logo pin with rocker
2000 hours	logo pin with rocker
2500 hours	polo shirt with additional gift
3000 hours	logo pin with rocker
3500 hours	logo pin and book store certificate
4000 hours	logo pin with rocker and restaurant certificate



## Special Recognition



In May of 2003, Otto Swoboda, a long time resident of the Colchester community of Fairfax County, offered to volunteer at the Occoquan Bay National Wildlife Refuge. Unlike so many other individuals who had offered to serve, Otto came back and has continued to serve through the end of this Fiscal Year. Otto will be recognized at a Fall Festival to be held at the refuge in October, for having accumulated over 500 hours of service. For the past year, Otto has greeted visitors to the refuge with a warm and friendly, “And how may I help you today?” Commitment and service have been the hallmark of his life. Otto’s been married for 50 years. He’s been a member of Our Lady of Angels Catholic Church in Woodbridge for over 50 years and he was a founding member of the St. Vincent DePaul Council where he’s served as a volunteer at its thrift store on Mondays and Wednesdays for over 40 years. Otto is the right hand public use person at the refuge. He has served as gate greeter on weekends, helped at special events, and assisted with the managed deer hunts. He has boasted that he will soon have his 1000 hours pin.

A newsletter design was completed this year. The newsletter will be in circulation in October of Fiscal Year 2005. Refuge volunteers Dan Brockwell and Donna LeFlore were instrumental in aiding in the design and distribution scheme for the newsletter. This will provide timely posting of events, volunteer opportunities and training.

On August 13, Suzanne O'Neil, a representative of the Rocky Mountain Arsenal Friends Organization provided a two day workshop for the refuge staff and Friends of the Potomac River Refuges. The sessions were an attempt to encourage team building and cooperation between the two entities.

Dorothy Estep and Kathleen O'Brien joined the public use volunteer staff. Dorothy has been working Saturdays and Sundays with Otto Swoboda. Kathleen is learning the basic duties at the entry booth and visitor contact station.

Paul Dodd and Lou Davis have been assisting the maintenance crew at Mason Neck and Occoquan over the past year with road projects, fence removal, painting and fabrication projects.

On Saturday April 3, 2004, the ExxonMobil Corporation conducted a cleanup of the shoreline. The cleanup was a success but crews were spread too thin causing some sections of the shore to have been missed. Approximately 2 miles of shoreline were cleaned. Exxon provided a catered lunch as well as portable toilets and wash stations. Judy Goreman of Exxon's public affairs office was given a certificate for her work over the years in providing the coordination of the cleanups. Approximately 89 employees and family members participated for a total of 267 hours of service. Thirteen refuge volunteers accumulated 68 hours of service

On May 22, 2004, volunteers from the Defense Intelligence Agency Rod and Gun Club, WalMart, Manassas Ice and Fuel Company, the Friends of the Potomac River Refuges and refuge volunteers coordinated the third annual youth fishing event. Patricia Wood, a veteran of the two previous events, co-coordinated the event with Outdoor Recreation Planner Marty McClevey. On Thursday May 13 and Saturday May 15, training sessions for the event were held for the volunteers. Fourteen volunteers attended the sessions. On the day of the event, volunteers coordinated the registration of the kids, traffic control, photography, and food service. Eighty-one kids participated. This event could not have been carried out without the support of each of these dedicated volunteers. Twenty-two volunteers donated an average of 6.2 hours for the event for a total of 136.5 hours.

Volunteer Rose Thomas staffed a table at the banding station on International Migratory Bird Day to educate the public on bird migration and facilitate tours of the station.

Suzanne Miller continued the coordination of the bird banding program at the Occoquan Refuge and the Migratory Avian Population Studies (MAPS) banding program at Mason Neck. Suzanne contributed over 400 hours of service to the Occoquan banding program alone. This banding station is growing each year in the number of volunteers, time spent on station, number of net locations and the ability of the station to function biologically and as an educational tool. Volunteer Bill Teetz, Suzanne Miller and Outdoor Recreation Planner Marty McClevey wrote a

proposal to the Friends Organization to fund a variety of pieces of equipment (nets, scales, etc) and a small storage shed to be placed at the station for permanent storage of the banding equipment. This proposal for support was accepted by the Friends Organization greatly enhancing the station's functionality and the comfort of the banders. Coupled with Scout Brian Parks trail, parking lot and restroom pad projects, the banding station has moved light years beyond where it was in the last Fiscal Year.

The Defense Intelligence Agency Rod and Gun Club provided invaluable assistance at the managed deer hunts. Lead by President Bernie Gately, the club assisted with hunt mailings and setting up the 15 tripod and tree hunt stands and the youth fishing event.

In July of 2004, Bill Wallen, a photographer with Twentieth Century Fox and Nikon Camera, offered his services to provide high quality photographs for the Complex. Bill has created digital photos for new interpretive panels and many other public use projects. He is another great treasure in the volunteer program.

Larry Brindza, a long time volunteer at the Mason Neck National Wildlife Refuge in managing the blue bird trail and wood duck box monitoring program and conducting raptor surveys, was provided an opportunity to continue monarch butterfly tagging as an official volunteer. Previously, Larry's work was conducted through a permit. Recognizing his work under a volunteer agreement will provide an outstanding opportunity for environmental education and provide the refuge with valuable migration data on monarchs.

Nicolai Steiglitz, a student at Mount Vernon Elementary School, completed 12 hours of community service work by sorting all VHS videos by category. This is the beginning of a reference library for the Visitor Contact Station.

## 5. Funding

See Mason Neck NWR – combined funding for Potomac River NWR Complex (page 9).

## 6.Safety

See Mason Neck NWR – page 9.

## 7. Technical Assistance

Outdoor Recreation Planner created a notebook of helpful information, technical sites and US Fish and Wildlife Service policy on the construction of communications towers. Copies of this manual were given to the Stafford County, Virginia, Planning Commission for use with their updated Telecommunications Plan. Marty consulted with Dr. Manville, a researcher with the US Fish and Wildlife Service in Arlington to find useful information for the manual. Later it was

learned that the Planning Commission endorsed all of the best management practices contained in the manual.

8. Other Items – Nothing to Report

F. HABITAT MANAGEMENT

1. General

Due to ongoing site rehabilitation by the Army, activity was limited to mowing and removal of tree lines. Site rehabilitation focused on the compound area in the center of the refuge, whereby the area was seeded with winter wheat and rye to provide an organic base for the seeding of Switch Grass, Big Blue Stem, and Indian grass the following year.

2. Wetlands – Nothing to Report

3. Forests – Nothing to Report

4. Croplands – Nothing to Report

5. Grasslands

Each year starting in February and continuing sporadically into March the staff mowed approximately 90 to 100 acres to suppress the shrub component from over-whelming the Eastern Gamma Grass grasslands. Similarly, in 2002 and 2003, the refuge burned approximately 80 to 90 acres to suppress the shrub component from over-whelming the Eastern Gamma Grass grasslands.

In May a tree line of cedars southwest of the parking lot were removed (n=10 to 15 trees) to open the meadows more for grassland dependent species and to remove perching points for brown cow birds and hiding areas for predators.

In January 2001, the National Park Service conducted a power saw class at the refuge. Thirty students and instructors assisted refuge staff in the limbing and removal of downed cedar trees. The Refuge transported the wood to Pohick Bay Regional Park for use in their campsite area.

In 2002, mowing a portion of the Refuge required a considerable amount of effort. Portions of the Refuge had not been mowed for four years. Sweetgums had encroached into many areas. Because of the four-year sweetgum stand, maintenance workers Boska and Revis used chainsaws and brush cutters to clear the sweetgums. The Deere 7200 tractor needed minor repairs. Maintenance worker Revis replaced the battery box assembly and the front grill screen. Maintenance workers' Boska repaired the Deere 609 rotary mower by replacing clutch linings and springs.

6. Other Habitats – Nothing to Report

7. Grazing – Nothing to Report

## 8. Haying – Nothing to Report

## 9. Fire Management



Refuge Biologist Witt completed a fire management plan for the site and it was approved by the regional office. The following year burn prescriptions were completed for both 2002 and 2003 and submitted to the Fire Management Officer for the south. In late March-2002 we burned approximately 80 acres and in late April-2003 we burned approximately 90 acres with the assistance of the Fire Management Officer and teams from two other refuges in the region. In February 2002, fire lines were both mowed and plowed using the Caterpillar D4 dozer, equipped with the new Tuffline tandem disc and the Deere 7200 tractor equipped with Hester fire plow, maintenance workers' Boska and Revis prepared the fire lines. In preparation for conducting prescribed burns and maintaining safe conditions on all three units of the complex, staff went through several training courses and testing.

Repairs were made to gauges on the complex's fire pumper trailer. The refuge purchased a large construction site toolbox for a storage area of refuge fire tools. A gravel pad and toolbox were placed at the refuge entrance to allow easy access to refuge personnel.

## 10. Pest Control – Nothing to Report

## 11. Water Rights – Nothing to Report

## 12. Wilderness and Special Areas – Nothing to Report

## 13. WPA Easement Monitoring – Nothing to Report



## G. WILDLIFE

### 1. Wildlife Diversity



Over 215 species of birds, 60 species of butterflies, and numerous mammals, amphibians, reptiles, and other species inhabit the site making it one of the most varied in northern Virginia. Major factors in the diversity are the over 600 species of plants that have been documented, the site's location at the junction of two rivers, and the many uses the land has been put to in the past.

**Table A.** Summary of the grassland birds observed at Occoquan Bay National Wildlife Refuge during May and June, between 2000 and 2003. The relative abundance of the birds in grasslands on the Refuge were based both upon a fixed-radius point count methodology using six 5-minute surveys each year at 18 point count stations and a territorial mapping methodology in four grids. Point count methodology consisted of counting all birds detected within a 50m and 100m radius of the point count center based on auditory and visual detections. Point count locations were positioned in the grasslands to minimize double counting and increase the likelihood of statistical independence by positioning and separating the points by approximately 250m.

<u>Common Name</u>	<u>Species Name</u>	<u>Within:</u>		<u>Grids</u>
		<u>&lt;50m</u>	<u>&lt;100m</u>	

Acadian Flycatcher	<i>Empidonax virescens</i>		3	
American Crow	<i>Corvus brachyrhynchos</i>	37	242	24
American Goldfinch	<i>Carduelis tristis</i>	178	309	313
American Robin	<i>Turdus migratorius</i>	2	11	11
American Woodcock	<i>Philohela minor</i>		2	
Baltimore Oriole	<i>Icterus galbula</i>	2	11	7
Bank Swallow	<i>Riparia riparia</i>		5	5
Barn Swallow	<i>Hirundo rustica</i>	30	41	5
Black-and-White Warbler	<i>Mniotilta varia</i>		2	
Blackpoll Warbler	<i>Dendroica striata</i>	4	28	7
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	35	103	16
Blue Grosbeak	<i>Guiraca caerulea</i>	20	40	62
Blue Jay	<i>Cyanocitta cristata</i>		1	
Bobolink	<i>Dolichonyx oryzivorus</i>	1	5	34
Brown-headed Cowbird	<i>Molothrus ater</i>	24	70	62
Brown Thrasher	<i>Toxostoma rufum</i>	4	10	30
Canada Goose	<i>Branta canadensis</i>	13	18	2
Carolina Chickadee	<i>Parus carolinensis</i>	5	20	3
Carolina Wren	<i>Thryothorus ludovicianus</i>	11	109	22
Cedar Waxwing	<i>Bombycilla cedrorum</i>	19	31	24
Chipping Sparrow	<i>Spizella passeriana</i>	4	7	3
Chimney Swift	<i>Chaetura pelagica</i>	3	19	2
Common Grackle	<i>Quiscalus quiscula</i>	75	148	11
Common Snipe	<i>Capella gallinago</i>			6
Common Yellowthroat	<i>Geothlypis trichas</i>	615	1198	1401
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>		1	3
Downy Woodpecker	<i>Picoides pubescens</i>	4	13	9
Eastern Bluebird	<i>Sialia sialis</i>	40	84	52
Eastern Kingbird	<i>Tyrannus tyrannus</i>	56	125	155
Eastern Meadowlark	<i>Sturnella magna</i>	27	81	79
Eastern Phoebe	<i>Sayornis phoebe</i>	2	12	6
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	25	89	110
Eastern Tufted Titmouse	<i>Parus bicolor</i>	5	74	8
Eastern Wood-pewee	<i>Contopus virens</i>	2	11	6
European Starling	<i>Sturnus vulgaris</i>	111	231	334
Fish Crow	<i>Corvus ossifragus</i>	4	24	
Field Sparrow	<i>Spizella pusilla</i>	110	292	361
Great Blue Heron	<i>Ardea herodias</i>	15	51	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	1	6	
Great Egret	<i>Ardea alba</i>	1	6	
Great Horned Owl	<i>Bubo virginianus</i>		1	
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	4	8	13
Gray Catbird	<i>Dumetella carolinensis</i>	3	4	1
Green Heron	<i>Butorides virescens</i>	4	9	8
Hairy Woodpecker	<i>Picoides villosus</i>		1	
Hooded Warbler	<i>Wilsonia citrina</i>	1	1	
House Finch	<i>Carpodacus mexicanus</i>	7	14	9
Indigo Bunting	<i>Passerina cyanea</i>	132	333	301
Killdeer	<i>Charadrius vociferus</i>	2	4	1
King Rail	<i>Rallus elegans</i>			1
Mallard	<i>Anas platyrhynchos</i>	4	8	3
Mississippi Kite	<i>Ictinia mississippiensis</i>		1	5
Mourning Dove	<i>Zenaida macroura</i>	13	73	38
Nashville Warbler	<i>Vermivora ruficapilla</i>			1
Northern Bobwhite	<i>Colinus virginianus</i>	44	206	98
Northern Cardinal	<i>Cardinalis cardinalis</i>	70	255	216

Northern Flicker	Colaptes auratus	7	29	30
Northern Mockingbird	Mimus polyglottos	19	61	56
Northern Parula	Parula americana		13	
N. Rough -winged Swallow	Stelgidopteryx serripennis	8	10	
Orchard Oriole	Icterus spurius	23	68	75
Osprey	Pandion haliaetus	43	74	12
Ovenbird	Seiurus aurocapillus	1	3	
Pileated Woodpecker	Dryocopus pileatus		3	1
Pine Warbler	Dendroica pinus			1
Prairie Warbler	Dendroica discolor	8	28	15
Prothonotary Warbler	Protonotaria citrea	2	9	1
Purple Martin	Progne subis	11	11	2
Red-bellied Woodpecker	Melanerpes carolinus	2	13	
Red-eyed Vireo	Vireo olivaceus	4	29	3
Red-head Woodpecker	Melanerpes erythrocephalus	1	1	
Red-shoulder Hawk	Buteo lineatus	1	1	
Red-tailed Hawk	Buteo jamaicensis	5	8	
Red-winged Blackbird	Agelaius phoeniceus	442	1044	719
Ruby-throated Hummingbird	Archilochus colubris			3
Savannah Sparrow	Passerculus sandwichensis			1
Song Sparrow	Melospiza melodia	3	17	22
Swainson Thrush	Catharus ustulatus			1
Tree Swallow	Iridoprocne bicolor	202	314	117
Turkey Vulture	Cathartes aura		5	
Warbling Vireo	Vireo gilvus			3
White-breasted Nuthatch	Sitta carolinensis		2	
White-eyed Vireo	Vireo griseus	4	35	2
Willow Flycatcher	Empidonax trailli	5	41	33
Wood Thrush	Hylocichla mustelina		1	1
Yellow-bellied Sapsucker	Sphyrapicus varius			3
Yellow-billed Cucko	Coccyzus americanus	3	23	3
Yellow-breasted Chat	Icteria virens	88	263	276
Yellow-throated Vireo	Vireo flavifrons		1	
Yellow Warbler	Denroica petechia	101	314	72
<hr/>				
Total Observations		2,758	6,878	5,438
Total Number of Species:		68	85	63





Auditory field surveys were completed by in 2000-2002 by students from George Mason University under contract with the refuge and 2003 and 2004 were completed by Ellen Carson, also, from George Mason University, as part of research for Ph.D. Final report and dissertation expected during FY2005. See Table B for summary of results from 2000-2004.

Table B. Results from and anuran call surveys at Occoquan Bay based on 9 to 10 calling points (stations) per year. Presence = P, Absence =A. In parentheses are the number stations where the species was identified by the surveyor during annual surveys with 3 to 4 surveys per station per year.

Common Name	Species	2000	2001	2002	2003	2004
Northern Cricket Frog	<i>Acris crepitans</i>	P(1)	A	P(3)	P(1)	P(1)
Southern Cricket Frog	<i>Acris gryllus</i>	A	A	P(4)	A	A
American Toad	<i>Bufo americanus</i>	P(6)	P(1)	P(3)	A	P(3)
Fowler's Toad	<i>Bufo fowleri</i>	A	P(1)	A	P(2)	A
Green Frog	<i>Hyla cinerea</i>	P(6)	P(4)	P(6)	P(9)	P(6)
Gray Treefrog	<i>Hyla crysoscelis</i>	P(6)	P(3)	P(8)	P(7)	P(6)
Gray Treefrog	<i>Hyla versicolor</i>	P(3)	P(3)	A	P(1)	A
Spring Peeper	<i>Pseudacris crucifer</i>	P(7)	P(7)	P(7)	P(10)	P(8)
Upland Chorus Frog	<i>Pseudacris feriarum</i>	A	P(1)	P(2)	P(5)	A
Bullfrog	<i>Rana catesbiana</i>	P(2)	P(4)	P(3)	P(5)	P(5)
Green Frog	<i>Rana clamitans</i>	P(8)	P(6)	P(5)	P(10)	P(6)
Pickerel Frog	<i>Rana palustris</i>	A	A	P(6)	P(9)	P(5)
Southern Leopard Frog	<i>Rana sphenoccephala</i>	A	A	P(6)	P(5)	P(3)
Wood Frog	<i>Rana sylvatica</i>	A	P(1)	P(5)	P(3)	A



## 2. Endangered and/or Threatened Species

Bald eagles have been seen frequently using the shoreline for perching and resting. A pair of eagles was seen roosting and perching along the eastern shore during months of January through March in 2004, but no nesting behavior was observed. Peregrine falcons have been seen in the spring on the refuge, apparently migrating north to more appropriate habitat.

## 3. Waterfowl

The man-made pond in the compound receives constant use, primarily by pairs of Canada geese, hooded mergansers, and wood ducks. Black Ducks, mallards, and wood ducks seemed to prefer the beaver impounded creek paralleling Easy Road. Ruddy ducks and lesser-and-greater scaup often raft off the southern shoreline near the mouth of Marumsco Creek.



#### 4. Marsh and Water Birds

Marsh bird surveys of Mason Neck and Occoquan Bay National Wildlife Refuges in June and July of 1999 using two passive listening intervals (initially a 0-5 minute period and 1-minute final passive period) and in-between a broadcast response (playback) portion. Six species ((least bittern LEBI, sora rail SORA, Virginia rail VIRA, Yellow Rail YERA, Common Moorhen COMO, and Piedbill grebe PBGR) were used in the broadcast/playback portion of survey, with each species having a 30 second broadcast call period followed by a 30 second silence period. Numbers in parenthesis are birds observed both in the initial 0-5 minute passive portion and during the broadcast portion of the survey.

#### 5. Shorebirds, Gulls, Terns, and Allied Species

Woodcock have become very visible during the spring with peenting activity noted in all quadrants and liable to occur well into early summer. With the mild winter, some woodcock were even heard peenting during the Christmas bird count in January.

#### 6. Raptors

The open expanses draw many raptors. Red-shouldered hawks utilize any of the smaller meadows fringed by trees while red-tailed hawks soar over the larger areas in competition with bald eagles and osprey. Kestrels can be seen near the main compound on light posts and the fence while harriers sweep the western half of the refuge.

#### 7. Other Migratory Birds

Wildlife biologist Witt initiated a series of grids throughout the open areas of the refuge for surveying grassland species and songbirds. Volunteers were scheduled to conduct much of the point count surveys but some dropped out, not having the necessary skills in song identification. Witt had to complete the surveys.

#### 8. Game Mammals

Spotlight counts to census the deer population were initiated in September 1998 and show an increasing population, followed by a decreasing population in 2001 due to hemorrhagic disease and hunting activity on the refuge. See Figure 3 and Big Game Management Plan.

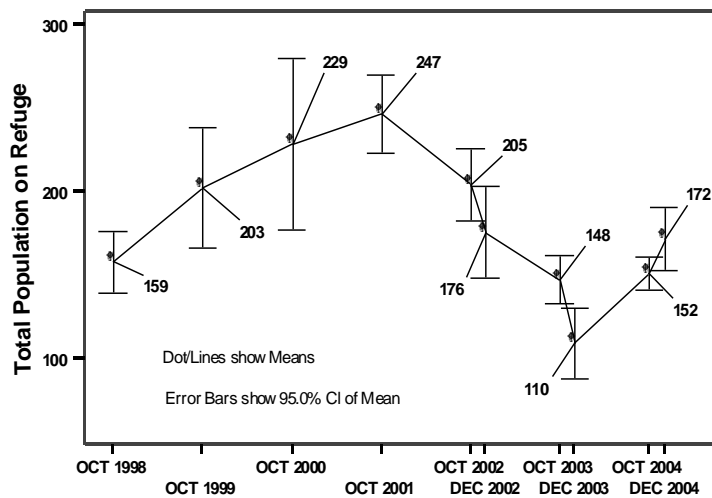


Figure 3. Estimated deer population at Occoquan Bay National Wildlife Refuge between 1998 and 2004, based on spotlighting approximately 190 acres and extrapolating estimates to 550 acres of meaningful and suitable deer habitat on the refuge. Methodology consisted of 4 to 6 road surveys per survey period using two observers in the bed of a large pickup.

9. Marine Mammals – Nothing to Report
10. Other Resident Wildlife – Nothing to Report
11. Fisheries Resources – Nothing to Report
12. Wildlife Propagation and Stocking – Nothing to Report
13. Surplus Animal Disposal – Nothing to Report
14. Scientific Collections – Nothing to Report
15. Animal Control – Nothing to Report
16. Marking and Banding

In 2001 a spring (April-May) banding station was established on the refuge with assistance of several volunteers near the mouth of the Marumsco Creek, providing valuable data on resident and migratory bird species using the refuge. Staffing for the station is almost totally composed of volunteers under the supervision of the refuge biologist. The lead volunteer for this project is Suzanne Miller, a resident of Fairfax County and volunteer bird bander with the Institute for Bird Population and their MAPS project at Mason Neck. Initially, funding for the station came primarily through the biological program of Potomac River NWR, but more recently the Friends group for the refuge has taken it under their wing and has built a storage building for the project. See attached Table for summary of all the birds banded on the refuge.

Name	CODE	2001	2002	2003	2004	Name	CODE	2001	2002	2003	2004
Red-bellied Woodpecker	RBWO	1	2	1	3	American Robin	AMRO	2	1	1	1
Downy Woodpecker	DOWO	4	3	2	4	Gray Catbird	GRCA	36	22	15	39
Hairy Woodpecker	HAWO	1		1	2	Northern Mockingbird	NOMO	3		3	1
Northern Flicker	YSFL	2	1		2	Brown Thrasher	BRTH	6	6	4	8
Pileated Woodpecker	PIWO		1		1	Cedar Waxwing	CEDW	1	3		
Eastern Wood-Pewee	EAWP				1	European Starling	EUST			3	1
Acadian Flycatcher	ACFL	1	1	1		Northern Parula	NOPA		1	2	1
Eastern Phoebe	EAPH		2	1	1	Yellow Warbler	YWAR		12	4	4
Great-crested Flycatcher	GCFL				1	Chestnut-sided Warbler	CSWA			1	
Eastern Kingbird	EAKI		5		1	Magnolia Warbler	MAWA		1	3	
White-eyed Vireo	WEVI	1			2	Black-throated Blue W.	BTBW	1		2	1
Philadelphia Vireo	PHVI				1	Yellow-rumped (Myrtle)	MYWA	104	48	57	48
Red-eyed Vireo	REVI	1	4	2	2	Palm Warbler (Yellow)	YPWA		2	4	5
Blue Jay	BLJA	3			7	Palm Warbler (Western)	WPWA			1	
Tree Swallow	TRES			2		Blackpoll Warbler	BLPW		12	6	2
N. Rough-winged Swallow	NRWS	1		2		Black and White Warbler	BAWW			1	
Carolina Chickadee	CACH	2	4	4	1	American Redstart	AMRE		2	1	
Tufted Titmouse	ETTI	6	7	3	5	Prothonotary Warbler	PROW	4	3	5	3
White-breasted Nuthatch	WBNU		1		1	Worm-eating Warbler	WEWA	1			
Brown Creeper	BRCR				1	Ovenbird	OVEN				1
Carolina Wren	CARW	7	3	6	11	Northern Waterthrush	NOWA	7	25	17	14
House Wren	HOWR	2	1		2	Common Yellowthroat	COYE	19	87	64	43
Winter Wren	WIWR		1			Hooded Warbler	HOWA	1			
Marsh Wren	MAWR	1				Wilson's Warbler	WIWA	1			
Golden-crowned Kinglet	GCKI				1	Canada Warbler	CAWA	1		1	
Ruby-crowned Kinglet	RCKI	4	1	4	3	Yellow-breasted Chat	YBCH	1		2	
Blue-gray Gnatcatcher	BGGN		3	6	4	Scarlet Tanager	SCTA		2		
Eastern Bluebird	EABL		1		2	Eastern Towhee	EATO	6	2	1	14
Veery	VEER	2		3	1	Chipping Sparrow	CHSP			3	
Gray-cheeked Thrush	GCTH			1	3	Field Sparrow	FISP	9	8	7	7
Swainson's Thrush	SWTH		4	3	2	Savannah Sparrow	SAVS	1			
Hermit Thrush	HETH			1	2	Song Sparrow	SOSP	16	10	5	14

Wood Thrush	WOTH	1	1	Lincoln Sparrow	LISP	2	1	2
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Swamp Sparrow	SWSP	12	4	8	7	Common Grackle	COGR	20	26	9	36
White-throated Sparrow	WTSP	62	84	29	66	Brown-headed Cowbird	BHCO		2	4	4
Northern Cardinal	NOCA	23	17	15	16	Orchard Oriole	OROR	3	3	11	7
Blue Grosbeak	BLGR			1	1	Baltimore Oriole	BAOR	1	2	5	1
Indigo Bunting	INBU	4	6	4	6	House Finch	HOFI			3	
Red-winged Blackbird	RWBL	14	14	8	27	American Goldfinch	AMGO	7	11	3	8
Rusty Blackbird	RUBL			1							

Species for the year		45	48	55	57
Number of birds		407	463	358	455
Net Hours		1034	1167	900	2101
Species to-date:		45	62	72	78
Banded to-date:		407	870	1228	1683

## 17. Disease Prevention and Control - Nothing to Report

### H. PUBLIC USE

#### 1. General

Yvonne Schultz and Marty McClevey serve as the Outdoor Recreation Planners for the Complex. Much progress has been made in moving the public use program forward and transitioning the Occoquan site from an Army Base to a Wildlife Refuge.

The entire region was still in shock from the tragic events which took place on September 11, 2001. At 9 A.M. maintenance worker Jamie Revis reported that he had heard of an incident at the World Trade Center. At ten that morning Marty McClevey was meeting at the contact station with Patricia Wood from Hidden Pond Nature Center when the news came of the collapse of the tower and the attack on the Pentagon. The smoke from the burning Pentagon could be seen from the refuge. Marine helicopters from Quantico could be seen moving quickly up the Potomac toward Washington. It was a day we never forget. At around 11 A.M., the entire staff was told to secure all buildings including the refuge and go home until further notice. Present that day were: Barbara Mitchell, Yvonne Schultz, Greg Weiler, Joe Witt, Marty McClevey, Steve Boska and Jamie Revis.

Marty attended Museum Property training at Patuxent Research Refuge from April 28-May 2. This training has aided him in processing the numerous maps and drawings and “stuff” left over from the Army’s presence on the site.

The Visitor Contact Station started to take shape as a contractor tore out walls and started renovating the interior. It is uncertain as to when this will all be finished. New automatic gates were installed at the Refuge entrance and at Taylor Road gate and at Taylor and Dawson Beach Road. Yvonne Schultz worked on the computer program for the entry gate to enable the gate to be opened with pass cards. Cards were ordered from Best Lock and distributed to the staff and permit holders. A contractor tore out the old culvert bridge on Taylor Road and replaced it with a large wood beam and post supported structure. Quarry trucks from Belmont carried loads of topsoil and fill material to the old Army compound to bury the concrete foundations and asphalt roads.

Marty conducted deed research at the courthouse in Manassas to determine where the boundary between the refuge and Woodbridge Village lies. No current surveys are available and no specific deed transfer has occurred between the Army and the Service. Marty has narrowed down the official address for the contact station as 13950 Dawson Beach Road and the Refuge as 14050 Dawson Beach Road.

This was another exciting year for the public use program at Occoquan Bay. The 900 square foot, Visitor Contact Station was dedicated on May 11, 2002. This was International Migratory Bird Day and the abundance of orioles and warblers was a calming from the business of preparing for the dedication. Outdoor Recreation Planners Yvonne Schultz and Marty



McClevey put a great amount of effort in planning for the event as well as making sure the building was cleaned and ready for public viewing. Congressman Tom Davis was the keynote speaker at the event which was held to the rear of the building under a large rental tent. The dedication allowed the public use program to turn a corner by providing meeting space and public contact space. The volunteers were excited about having a working bathroom on site. Marty spent two days waxing floors. Yvonne had charge of inviting guests, planning for food and making sure the speakers and the tent were in order. The event was not well attended but was a fun day for the staff. Next year the building will be used to celebrate the Centennial of the Refuge System. Other speakers for the event included Sean Connaughton –Chairman of the Prince William County Board of Supervisors and Allyson Rowell, Chief of Visitor Services of the National Wildlife Refuge System.

The first youth fishing event was held at the Painted Turtle Pond on June 1, 2002. Because this was the first event, much time went into planning, soliciting support and recruiting partners and volunteers. This event is covered in detail in the Volunteer and Fishing portions of the Narrative.

The first prescribed fire for the Complex was approved at the Occoquan Refuge. Refuge staff (Greg Weiler, Steve Boska, Marty McClevey and Joe Witt) assisted a fire team from Great Dismal Swamp in the operation. Gary Kemp was the burn boss for the fire. Eighty acres of three separate fields at the refuge were burned. The public use staff has used the fires as an opportunity to interpret fire management on wildlife refuges.

On March 19, 2002, Marty McClevey coordinated a meeting at the Visitor Contact Station to introduce the public to the process involved in starting a Friends Organization and to introduce the key individuals who will lead the effort. Over 30 people attended the event, many of whom had never been involved or associated with the refuge.

Marty McClevey attended a week long Introduction to Visitor Services Workshop at NCTC from December 3-7, 2001.

#### *The Centennial of the National Wildlife Refuge System*

FY 2003 was the year of the Centennial, snipers and hurricanes. Each of these had a marked impact upon the Public Use activities of the Complex. Overall it was a productive year for the public use program because of the emphasis on the Centennial. It also marked the end of the tenure of two long time employees. Barbara Mitchell, the Administrative Officer for the Complex retired in December. In May, Yvonne Schultz, lead Outdoor Recreation Planner, transferred to the Eastern Shores of Virginia National Wildlife Refuge. Yvonne had guided the Mason Neck program for over a decade and was well respected and regarded within the environmental education community. Yvonne took with her the Junior Duck Stamp Program which had been a long running public use outreach activity. Marty McClevey, the first Outdoor Recreation Planner assigned to the Occoquan Bay National Wildlife Refuge, assumed the duties as the principal public use employee for the Complex. New trail counters were tested at the Mason Neck National Wildlife Refuge and a man named Otto Swoboda walked into the life of the Complex by volunteering to greet visitors at the entry gate of the Occoquan Refuge. Otto donated over 500 hours of service before the end of the year. Otto's presence at the gate on



weekends and some weekdays, enabled Outdoor Recreation Planner Marty McClevey to take care of other critical work in public use.

The Friends of the Potomac River Refuges received 501.C3 status and began establishing a membership base. The organization applied for a Chesapeake Bay Gateways Network grant to fund the drafting of an interpretive plan for the refuge.

In October of 2002, two men began a spree of random sniper shootings in Washington, D.C., Maryland and Virginia. These incidents prompted the suspension of group activities and events on the Mason Neck and Occoquan Bay Refuges. The refuges remained open to the public for general visitation, previously permitted activities and special studies. It was agreed that the Complex would follow the lead of the Prince William County School System and re-evaluate the suspension of activities if school activities were resumed.

Following up on last year's Centennial celebration, many exciting activities, events and milestones were passed in 2004. A 24 foot by 36 foot pavilion was constructed at Painted Turtle Pond to provide shelter for the expanding environmental education program and to help facilitate the annual fishing event. The refuge staff installed five 10 foot sections of portable dock below Painted Turtle Pond to help facilitate aquatic EE studies and to lessen the impacts of school groups on the small marsh site. New prefabricated CXT toilet units were installed at the refuge. A single toilet unit was installed at Painted Turtle Pond and a double toilet unit was installed at the main parking lot. These new facilities have greatly improved the comfort of both staff and the visitors. The units are low maintenance and virtually indestructible. A traffic counter was installed on the main entry road to provide more accurate accounting of visitation. The entry booth is still staffed on weekends giving a 100 percent count of visitors. This information is the basis of statistical expansion factors used in conjunction with the counter tallies to determine annual visitation. It was determined that an average of 1.6 individuals per car enter the refuge. The annual visitation for the Fiscal Year was approximately 10,000.

Marty McClevey continued his duties as Outdoor Recreation Planner for the Complex and provided guidance to a Student Cooperative Employment Program (SCEP) intern. Lisa Gocalves, a student at New Mexico State University served as the SCEP intern from June through August of 2004. She assisted in weekend operations at the refuge and assisted with some biological work as time permitted. Lisa provided assistance in the design of new interpretive panels for Mason Neck and Occoquan and conducted a publicly advertised program for kids.

The refuge moved forward in its relation with the newly established Friends Organization. The refuge staff worked with the organization in coordinating the fishing event and the planning of a Fall Festival in October of 2004 (FY 2005). The Friends group installed a series of interpretive signs along some of the walking trails and successfully obtained a grant from the Chesapeake Bay Gateways Network for the design and installation of interpretive panels dealing with Chesapeake Bay topics. The Friends Organization matched the grant money by providing in-kind services for the creation of an interpretive plan for the refuge. The National Park Service provided assistance in this effort by conducting a workshop at the Visitor Contact Station on

interpretive planning. John Ververka, a renowned interpretive specialist, was the primary instructor.

Marty McClevey represented the Complex at the dedication of the new Freedom High School in Woodbridge, Virginia. This school is dedicated to environmental education. The Complex received a certificate as a partner to the school.

New Occoquan Bay brochures were delivered this year to replace the first addition of the brochure. The meadowlark, a grassland bird, was selected as the animal to represent the purpose of the refuge. In spite of the presence of meadowlarks at the refuge year round, none of our many photographers to the site were able to obtain a photograph of this bird. The photograph used on the refuge brochure was purchase from an outside source. One of the goals for the next Fiscal Year is to obtain our own photo of this bird. Marty McClevey and Lisa Gocalves prepared mockups of several new interpretive panels to be placed on the refuge. The panels will interpret birding, the bird banding station, invasive and exotic plant species, butterflies and the US Army's presence on the site. The panels will be installed in Fiscal Year 2005.

As noted in the Volunteer portion of this report, major improvements were made at the bird banding station. A100 foot accessible trail was installed at the station along with a pad for an accessible portable toilet and storage shed. An interpretive panel and bulletin board are on order for the site as well. These amenities have made the station more visitor friendly while greatly improving the comfort of the banders.

Marty McClevey worked on the interpretive plan for the refuge, created a snow removal plan and completed the first draft of a sign plan. Marty also made a one day visit to the Back Bay National Wildlife Refuge to obtain experience in fee collection. Gladys Morgan a refuge seasonal ranger provided an outstanding overview of all aspects of fee collection, passport and duck stamp sales. Dean Werner, the law enforcement officer for the refuge gave McClevey and overview of potential problems, types of fee collection safes, and the creation of fee envelopes and signs. This was time well spent.

In August and September, numerous storm systems, caused the early closing of refuge. On September 17, over 30 tornadoes were reported in Virginia and Maryland as the remnants of hurricane Ivan passed through the region. This was the greatest outbreak of tornadoes on a single day in the region in recorded history. On that day, Marty McClevey and Otto Swoboda moved quickly to alert visitors of the potential dangers and then close the refuge. NOAA weather alert radios were purchased for use in the contact station and to be carried by refuge staff while in the field.

Outdoor Recreation Planner Marty McClevey moved into the office vacated by Yvonne Schultz. This provided more storage space and an office more conducive to creative thinking.

## 2. Outdoor Classrooms - Students

Kim Hosen, Director of Nature's Wonderworld, obtained a permit to conduct environmental education on the refuge for the fall of 2000 and spring of 2001. She was working under a contract from Prince William County Schools to provide EE for up to 1,200 students.

Kim Hosen, the director of Nature's Wonderworld, obtained a contract with Prince William County Schools to conduct Environmental Education on the refuge. The contract required a minimum of 1,400 students to be enrolled in the field trips. In 2001-2002 school year Kim and her four assistants provided aquatic studies for 2,000 students and 201 teachers and chaperons. Kim's activity was divided into to specific sites. One was at a small woodland pool along Deephole Point Road near the intersection with Fox Road. The second site was the small wetland/marsh below Painted Turtle Pond. The overuse of the sites, evidenced by compaction, erosion and the dieback of plants raised concerns about future environmental education on the refuge.



Kim Hosen of Nature's Wonderworld continued its contract with Prince William County Schools to provide environmental education activities for 1400 kids per school year. Nature's Wonderworld obtains a permit for the use of the Occoquan Refuge in the Fall and Spring.

An estimated 1400 kids, 4 paid staff from Nature's Wonderworld and 140 adult chaperons participated in the 2002-2003 school year.

## 3. Outdoor Classrooms-Teachers – Nothing to Report

## 4. Interpretive Foot Trails

The walking area at the refuge was expanded by a mile when the road system from the Fox Road to the pond and entry road was added to the trail system. The total mileage of trails is approximately 3.5 miles.

The Friends Organization took on the task of designing, purchasing and installing a series of interpretive signs along the walking trail from the main parking lot of the refuge down Fox Road to the bay and then along the Deephole Point Road to the entry road. Initially the Friends Organization wanted to design a self guided trail circuit with a guide brochure. This effort was discouraged in lieu of small, nine inch by twelve inch single post interpretive panels which would cover a variety of interpretive topics. The trail was later designated as the Centennial Trail.

Plans continued for the opening of three miles of additional walking trails in the eastern portion of the refuge. This new circuit will create a connection between the trails in the south and the eastern portion of the refuge. The circuit will allow hikers to travel from the main parking lot to Fox Road to Bay View to Charlie Road and then out to the gravestones at Belmont Bay. Hikes will then be able to walk from Charlie to Taylor Point Road and along the Osprey Golf Course to the north gate at the Dawson family home site. They will then walk along the wildlife drive south along Bravo Road to Charlie and then return to the parking lot. Outdoor Recreation Planner Marty McClevey has broken the trail system into two distinct circuits. The circuit to the south is called Deephole Point Trail and the circuit to the east is called Taylor Point Trail. Plans call for the bridging of Catamount Creek at its confluence with the Occoquan River. When this is completed in Fiscal 2004, hikers will then have an additional one mile of shoreline to walk from the gravestones to Deephole Point.

In July of 2004, a new series of trails was opened to the public. The trail system allows for visitors to hike from the main parking lot along Bay View Road, to Charlie Road, east to Deephole Point and then north to Taylor Point Road and returning by way of the wildlife drive. This new trail area doubles the existing trail system. Mockup locator map signs were created by Lisa Goncalves and posted at seven locations around the refuge. Permanent map locator signs have been ordered for installation in Fiscal Year 2005.

The Friends Organization purchased 9x12 inch interpretive signs for a trail circuit from the main parking lot, down Fox Road to the gazebo and then along the high ground portion of Deephole Point trail to the entry road. The panels interpret topics such as grasslands, bird migration, forest succession and prescribed fire.

Representatives of the Army Corps of Engineers and Regional Engineer Jim McPherson coordinated the placement of culvert pipes at the mouth of Catamount Creek to provide a road access or bridging to the Belmont Bay side of the refuge. The contractor did not do a very good job and some of the remaining work had to be completed by refuge staff. The bridging allows visitors to walk the entire Occoquan River shoreline, a distance of about 2 ½ miles.

Marty McClevey met with Don Briggs from the National Park Service to discuss the location and specific routing of the Potomac Heritage Trail. This trail will provide a continuous route from Quantico, Virginia into West Virginia. A segment is planned to run through or adjacent to the Occoquan Bay National Wildlife Refuge.

## 5. Interpretive Tour Routes

Outdoor Recreation Planner Marty McClevey and Yvonne Schultz studied the prospects of opening a mile of gravel roads to vehicle traffic. The route would take visitors northeast out of the main parking lot along Locust Road and then across Lake Eva on Charlie. The route would make a left turn onto Bravo and exit out onto Taylor Point Road. Plans call for the paving of Taylor Road and the construction of a larger bridge on Taylor Road at Catamount Creek. These projects are expected to be completed in Fiscal 2003 for the official opening of the wildlife drive

in March of that same year. Volunteers have been involved in the process of evaluating the route and determining trouble spots and pullover sites.

Occoquan Bay National Wildlife Refuge was accepted as a stop on the Virginia Coastal Birding Trail. This trail, supported by maps provided by the State, provides for a linking together of prime birding stops throughout the coastal plain region of Virginia. Mason Neck was also accepted into the system.

## 6. Interpretive Exhibits and Demonstrations

Marty McClevey staffed an exhibit at the Girl Scout Eco Expo at Greenbelt Park. The exhibit promoted the Adopt a Refuge Program. Six Girl Scouts assisted him with the display. This display was created by the girls and has been used at all refuge events. It is estimated that over 300 Scouts viewed the exhibit.

Marty McClevey provided training to 9 Girl Scouts in preparation for the Junior Badge event. The girls learned about the history of the site and were coached on conducting specific badge stations.

On May 11, Marty McClevey coordinated a special International Migratory Bird event at the Woodbridge Commuter Rail Station. The theme for IMBD was "Shade Grown Coffee". Marty worked with Jennifer Wheeler of the Migratory Bird Office in Arlington to provide shade grown coffee to morning commuters. The event was a tremendous success as coffee was served to hundreds of people who in turn learned why it was important for the conservation of migratory birds that shade grown coffee be promoted in the US. Jennifer was thrilled to participate. Joe Witt and Greg Weiler also came out to serve coffee.

The Virginia Junior Duck Stamp contest was hosted by the Complex. Outdoor Recreation Planner Yvonne Schultz coordinated the competition. Yvonne worked very hard in promoting the contest and processing the artwork. This year's competition was held in the Board Chamber of Hilda Barg, Woodbridge Supervisor.

The Centennial fishing event provided an opportunity for an exhibit on the National Wildlife Refuge System. Marty McClevey created a Centennial panel with quotes from Rachel Carson and Theodore Roosevelt. He also used the TR Bear and Blue Goose to explain the evolution of the system.

Girl Scout Kersti Smedley created a display on the effects of prescribed fire on the grasslands. This display was used at a number of regional Girl Scout events as well as at the Girl Scout Adopt-A-Refuge events.

On November 6, 2003, Marty McClevey and Biologist Joe Witt participated in a Career Day and Mary Washington College. Twenty-five students were contacted and provided with information on the SCEP opportunities and current job possibilities.

On January 7, 2004, Otto Swoboda and Marty McClevey attended the ground breaking ceremony for the new Belmont Science Center of the Science Museum of Virginia. The event was held at Belmont Elementary School and the entire faculty and student body attended along with the usual dignitaries and so forth. Swoboda and McClevey staffed a display on the Wildlife Refuges. As a follow up to this, the refuge was invited to participate in a special reception at the Science Museum in Richmond. This event was geared towards members of the House of Delegates. The theme of the event was on the history of manned flight. Refuge Manager Greg Weiler and Marty McClevey attended the evening reception and staffed an information table and exhibit on the Occoquan Bay Refuge and the Refuge System. It is estimated that over 500 individuals were contacted.

On May 1, 2004, Marty McClevey hosted a special tour of the Occoquan Refuge for members of the Prince William Historical Commission. Over 30 members, lead by Jane MacDonald, participated in the tour. The emphasis was on the overall history of the site and the specific need to preserve the two 17<sup>th</sup> century grave stones on the refuge. McClevey is working on a cooperative plan with Prince William County to have the stones moved to the historic Rippon Lodge for safe keeping and possible conservation work. The stones will be moved in Fiscal Year 2005.

On March 6, members of Fairfax Audubon, led by Marc Ribauda participated in a woodcock program at the refuge. Approximately 12 individuals attended. This program was facilitated by refuge staff.

On March 13, Marty McClevey led a short walk on the refuge for a small Brownie Troop. Three girls and two adults participated. The walk was another attempt to promote Linking Girls to the Land.

In June, Marty McClevey, Lisa Gocalves and Bob Poss of the Washington Fisheries Office participated in a special fishing day at the Woodbridge WalMart Store. Hundreds of kids and adults were given information on fishing and small belly pouch tackle boxes. This event helped to acknowledge the Complex's sincere appreciation for WalMart's assistance with the Occoquan youth fishing event. Bob Grossman, an employee with Manassas Ice and Fuel Company and WalMart, hosted this event. Bob was a big help at the third youth fishing event.

In November of 2003, the refuge hosted a special program put on by the Wild Bird Center at the visitor contact station on feeding birds. The event was not well attended.

In July of 2004, Lisa Gocalves and volunteer Patricia Wood conducted a program for kids at the contact station. The program called, "Scats and Tracks", gave kids an opportunity to create nature notebooks and to explore the refuge for scats and tracks. The kids learned to make plaster casts of animal tracks. Ten kids attended the morning program. This was the first publicly advertised program for the refuge.

## 7. Other Interpretive Programs

Sandy Spencer attended a career day at Mary Washington College. She provided information to students on the Student Career Experience Program.

Yvonne Schultz coordinated the Junior Duck Stamp competition for the State of Virginia on March 28. This is the eighth year for this competition. This year's contest had 154 entries. Woodbridge District Supervisor Hilda Barg served as a judge for the contest. This year the event was held on site at the Occoquan Bay Visitor Contact Station.

On March 6, Marc Ribaud, a member of Fairfax Audubon, conducted a special evening woodcock program for Audubon members. Fourteen individuals participated along with Outdoor Recreation Planner Marty McClevey. Numerous woodcocks were heard. It is anticipated that this will become an annual event for the refuge.

On April 21, the refuge hosted the annual Virginia State Junior Duck Stamp Contest. This year the refuge received 400 entries. This was a record number of entries over our previous high entry number of 175. Prince William County Supervisor Hilda Barg continued her involvement in the contest as a judge. The Mason Neck NWR, now the Potomac River NWR Complex has hosted this event for the past 8 years. Outdoor Recreation Planner Yvonne Schultz has been coordinator of this event for the Complex over those 8 years. Yvonne transferred to the Eastern Shores of Virginia NWR in May and will be continuing the program at that Refuge.

Beginning in December of 2002, Outdoor Recreation Planner Marty McClevey, museum property coordinator for the Complex, was given the task of determining appropriate items to be placed in the Centennial Time Capsule. Work on this task continued through the Time Capsule/Centennial Celebration on March 11, 2003. We were fortunate to obtain the assistance of Terry Boone, paper conservator and archivist from the Library of Congress. Terry advised McClevey on selection and appropriateness of items for the capsule as well as selecting items that would endure for 100 years within the capsule. Items were contributed by local conservation organizations, State Parks, the Virginia Department of Game and Inland Fisheries,

On March 11, 2003, the staff of the Potomac River NWR Complex greeted the Region 5 Centennial Blue Goose Tour. The tour was lead by Region 5 Refuge Chief Tony Leger. The group arrived on a chartered bus called the Blue Goose, the symbol of the National Wildlife Refuge System. The Region 5 team consisted of Victoria Jacobson, Archeologist, Ed Christopher, Ecologist, Laurie McDermott, Engineer, Richard Yee, Engineer, John Stasko, Refuge Supervisor South, Kim Halpin, Centennial Coordinator and Laura M. DiPugio, Outreach Assistant. A special open house and Centennial celebration was held at the Occoquan Bay NWR Visitor Contact Station. Special guests included United States Congressman Thomas Davis III of the 11<sup>th</sup> District, Virginia House of Delegates Michele B. McQuigg of the 51st District, Prince William County Supervisor Hilda Barg. Volunteer Stephanie Leon served as a greeter. Board Members of the Friends of the Potomac River Refuges included, Larry Underwood, President, Annette Baker-Toole, Vice President, Elizabeth Reiben, Secretary and Byran Cloyed. Also in attendance was Jack Parry of the Science Museum of Virginia, Steve Caruthers of the Belmont Bay Corporation, Glenda Booth of the Mount Vernon Gazette, Brig Cabe of the Mount Vernon

Journal and Jared Simms and Dan Lovelace, Biologists with the Virginia Department of Game and Inland Fisheries. Items to select for the time capsule were placed on display. Tony Leger greeted the guests on behalf of the Blue Goose Tour. Manager Greg Weiler served as the master of ceremonies. On Friday March 14, Marty McClevey and Terry Boone worked together to carefully package the items selected for the capsule and place them within the capsule.

## 8. Hunting

Maintaining and improving the quality of the habitat and protection of the grasslands and wetlands on the refuge and providing optimum conditions for migratory birds by maintaining the whitetail deer population within the habitat carrying capacity is the goal of the hunting program at Occoquan Bay National Wildlife Refuge (NWR). The Refuge hunting program will serve this goal by reducing the local deer herd through removal of a higher percentage of females and young of the year. Also pursuant to this goal are plans to conduct a formal assessment of the condition and response of the grassland and forested habitats and an enactment of an appropriate grassland/forest management plan and response monitoring program based on the findings of the assessment.



In 2001, the Refuge prepared an Environmental Assessment addressing management options available to the refuge in managing and controlling the growing white-tailed deer herd that inhabits the Refuge, and in 2002 the refuge initiated four days of hunting to manage the deer population. In 2002 the refuge harvested 56 deer during four day of hunting using a combination of generation, women only, and general (all hunters could participate in the hunt) hunting in direct cooperation with Virginia Department of Game and Inland Fisheries. Similarly, in 2003 the refuge harvested 32 deer based on four days of hunting in cooperation with Virginia Department of Game and Inland Fisheries. [(Background: The Proposed Action - Provide a Controlled Hunt for the General Public was adopted and Service made a determination of Finding of No Significant Impact (FONSI, signed by the Acting Regional Director on Oct. 16, 2001) to the proposed action].



Deer management has also provided opportunities for growth and learning. The refuge began the final plans for the initiation of managed deer hunts to be held on the refuge in the Fall of 2002. The Virginia Department of Game and Inland fisheries coordinated most of the registration and orientation for the hunts which were geared towards youth (Generations Hunt) and women (Women in the Outdoors). The refuge purchased moveable tree stands and tripod hunt stands. The DIA Rod and Gun Club provided assistance in determining locations for each stand and helping to erect them on site. The first hunt was held on November 19. This hunt promoted hunting opportunities for women. The second hunt was a "Generations Hunt" which promoted youth hunting. The two additional days of hunting on November 26 and 27 were open to any lottery applicants. Each hunt enabled up to 15 applicants to attend a morning instructional session followed by a lunch. Each hunter was then placed in a specific hunt stand. The youth were required to have an adult attendant with them in the stand. The Fall hunts were a success in the number of deer taken per hunter. A total of 57 deer were taken over 4 days of hunting. The Visitor Contact Station was used to conduct the special training and orientation sessions for these hunts.

The Occoquan Bay National Wildlife Refuge hosted its second series of annual managed deer hunts. The Virginia Department of Game and Inland Fisheries provided the leadership in coordinating the hunts for youth and the general public. Members of the DIA Rod and Gun Club assisted with each day of the hunt. Volunteers Patricia Wood and Otto Swoboda assisted with traffic control and the deer check station. Approximately 12 hunters per day participated. The visitor contact station was used for the morning orientation sessions. The State provided a catered lunch for the participants before placing each at one of the 15 hunt stands on site. Refuge maintenance workers Revis and Boska assisted with transporting hunters and bringing in the deer to the check station. Manager Greg Weiler coordinated the work of the Rod and Gun Club while biologist Joe Witt operated the check station. Marty McClevey helped with transportation and communications.

## 9. Fishing

Where can you go with your worms and your wishes? A National Wildlife Refuge!

This was the theme of the Centennial Youth Fishing Event held on June 1, 2002. The event was held at the 2 ½ acre Painted Turtle Pond in the southeast portion of the refuge. The purpose of the event was to introduce kids 5-12, from the community, to an outdoor activity- fishing and to the National Wildlife Refuge System. Pre-registration was preferred but not required. Food was provided for the kids along with goody bags filled with fishing information, tackle and Centennial stuff. The event ran from 9 A.M. to 3 P.M. Thirty-eight kids participated. Most stayed for the entire day and most caught fish. Volunteers used Polaroid cameras to photograph each kid with a fish. Each kid also received a certificate for participating. The largest fish was a 5-6 pound large mouth bass approximately 21 inches long. We estimate that in addition to the 38 kids, that 75-80 parents, family members and visitors attended the event.

Volunteers from the Fraternal Order of Police, DIA Rod and Gun Club, ExxonMobil, Lee's Trolling Motor and the Friends Organization assisted. Volunteers contributed 159 hours.

ExxonMobil paid for the rental of wash stations and a mobility impaired toilet. Lee's Trolling Motor contributed a case of night crawlers. WalMart was a big sponsor of the event and contributed over \$400.00 in items. The Virginia Department of Game and Inland Fisheries contributed creel bags, fish identification posters, fishing instruction booklets.

The Occoquan Bay National Wildlife Refuge hosted a youth fishing event on Saturday May 31, 2003. Forty-nine kids, age 5-12, participated in the event held at the 2.5 acre Painted Turtle Pond located on the southwest portion of the refuge. Members of the DIA Rod and Gun Club and Bob Pos from the Washington Fisheries Office provided one on one coaching for the kids. All kids received a goodie bag which included a tackle box, a certificate and photograph with a fish. Lunch was provided to all participants and family members. Volunteer Bill Mitchell provided his large gas grill to cook hotdogs. The event was a success in spite of a mishap just outside the refuge in which a gas main was broken by a construction crew. Dawson Beach Road, the main access road to the refuge was shut down to all traffic. By 11 A.M. the entire neighborhood outside the refuge had been evacuated and no traffic was allowed to enter. We had an excellent turnout of volunteers and visitors and an outstanding amount of support by partners which included Wal-Mart, Batteries Plus, Lee Trolling Motor, ExxonMobil Corporation and the Virginia Department of Game and Inland Fisheries.

On September 16 and 17, 2003, the refuge staff began preparations for a visit by a powerful lady named Isabel. Isabel was a powerful hurricane which made its way northward through the Mid-Atlantic states. She made landfall as a category 1 storm and immediately downgraded to a tropical storm. She came up through the Potomac River drainage pushing a powerful storm surge into all of its tributaries including the Occoquan River. Preparations included moving portable toilets, signs, barricades and anything else that could be quickly and practically moved, into the Army bunker structure.

The doors to the Contact Station and adjacent shed were duct taped to seal out the heavy rains. Heavy equipment and refuge trucks were parked in a cluster in the southern end of the main parking lot of the refuge. Heavy cinder blocks were carried to the roof of the Headquarters building at the Prince William Plaza to hold down the newly installed satellite uplink.

By midnight of September 18, the region was hit by sustained winds in excess of 40 miles per hour with gusts of over 60. These strong winds toppled trees into yards, onto buildings and powerlines. The winds coupled with the high tide, pushed a storm surge of 8 feet onto the refuge. The surge destroyed several homes along the Marumsco Creek, destroyed all duck blinds off shore and flattened over a mile of the perimeter chain link fence which had been erected and maintained by the Army for decades. Silt marks on the interior walls of the bunker gave evidence to over two feet of water flooding the structure. Storm debris was found up all drainages as far inland as one half mile near the southern most portion of the Army Compound site (at the intersection of Easy Road and Bay View Road or one half mile from the river). On September 20, refuge staff observed receding water along Fox Road and debris hanging in trees along the shore as high as 8 feet.

From a public use perspective the fence was a very controversial amenity on the site. Since the refuge's dedication in 1998, debate had ensued over the need to maintain the fence, "good fences

make good neighbors” or to remove the fence to increase the view and access to the river. Isabel effectively cast the die in the matter and it was decided that the fence destroyed by the storm would be dismantled and the remaining fence removed as time and money permitted. It was difficult to predict the benefit(s) of a fenceless shoreline, but visitors and staff all agree that the storm’s act of dealing with the fence was, all in all, a good thing. Now the refuge staff will have to be vigilant in watching for trespass. The fence effectively kept river debris and trash from washing over the shoreline road (Deephole Point Road) and into the refuge interior. With the fence now gone, this debris will be a continual maintenance issue because of the continual need to clear the walking path of debris. Refuge staff will be posting the refuge perimeter with AREA CLOSED signs to warn those entering the refuge by way of the river.

The refuge conducted its third annual youth fishing event on May 22, 2004. The event targeted youth age 5 – 12. The event site was a 2 ½ acre Painted Turtle Pond, located on the southwest portion of the refuge. Volunteer Patricia Wood worked with Outdoor Recreation Planner Marty McClevey to facilitate the event. In spite of the fact that Patricia had emergency surgery three weeks before the event, she still enthusiastically participated and in fact helped run the registration for most of the day.

Volunteers started registering kids at 0830 and continued to 1300 hrs. Forty-nine registration forms were filled out through the course of the event. Seventy-five kids were pre-registered and eighty-one kids participated. Patricia Wood, Donna Rae Dean and Barbara Mitchell staffed registration through the event. In addition to the 81 kids, 50-70 individuals (parents, family members, and visitors) attended the event.

Bill Mitchell represented Lee’s Trolling Motor Repair. He provided a commercial hotdog cooker and took care of food services.

Members of the DIA Rod and Gun Club assisted at the event by helping kids fish. Eight members of this organization participated.

WalMart donated 312 cans of coke products, 300 hotdogs and buns, 100 bags of Frito brand chips, ketchup, relish and paper products. Food was served at 1140 and adults and kids were provided with lunch.

Annette Baker-Toole and her husband Dennis Toole along with volunteers Sara Allison and Assistant Manager Daffny Jones used Polaroid cameras to take photos of the kids as they fished. Each child was given a photo, a certificate for participating and a goody bag filled with a variety of fishing information and tackle, a creel bag, measuring tape, hooks and lures. WalMart donated 9 packs of Polaroid film. The Virginia Department of Game and Inland Fisheries contributed fishing guides, creel bags and coloring books. Manassas Ice and Fuel donated 60 pounds of ice. The total dollar amount for contributions from all sources was around \$702. 75.

Four staff and 22 volunteers participated. Eighty-one kids participated.

## Partners for the Event:

Batteries Plus  
Lee Trolling Motor Repair  
Walmart Corporate Office  
Virginia Department of Game and Inland Fisheries  
Defense Intelligence Agency Rod and Gun Club  
Friends of the Potomac River Refuges  
Walmart, Woodbridge Store

### 10. Trapping – Nothing to Report

### 11. Wildlife Observation

A spotting scope was mounted in the new gazebo which is located on the bluff at the end of Fox Road, overlooking the Occoquan Bay. Three volunteers assisted with the installation. The scope enables observation out onto the bay or into the fields of the refuge.

We continued to facilitate the Audubon Christmas Bird Count and the Spring Migration Counts. An emphasis was placed on a greater utilization of the bird banding station for public interpretation. A future Eagle Scout project will be aimed at enhancing the banding station site, creating an accessible trail to the station and training volunteers to assist with the non-technical end of the banding operation. The Americorps Team constructed a 20 foot by 20 foot compacted gravel pad for the station's tent.

The bird banding station will be utilized for interpretive purposes. The banders are excited about the opportunities for the public to view the birds as they are being banded.

The Fairfax Audubon has utilized the refuge for woodcock programs, Christmas Bird Counts and Migratory Bird Counts. All of these opportunities have been open to the public.

Two rough-legged hawks showed up at the refuge on January 30, 2004 and remained there for about 2 weeks. Their presence prompted the need for the creation of specific instructions on where to view the hawks and how to view the hawks. Birders from around the region visited the refuge during this time to view the hawks.

### 12. Other Wildlife Dependent Recreation – Nothing to Report

### 13. Camping – Nothing to Report

### 14. Picnicking – Nothing to Report

### 15. Off-Road Vehicling – Nothing to Report

### 16. Other Non-Wildlife Dependent Recreation – Nothing to Report

## 17. Law Enforcement

Two men caused much fear and hardship within the region when they began a sniping spree in Montgomery, Maryland. Incidents occurred as far south as Doswell, Virginia. The shootings were random and occurred during the day and night. This prompted the suspension of outdoor group gatherings and activities. Events and activities were curtailed at Mason Neck and Occoquan Bay until the two men were caught in early 2003.

A damage to government property incident occurred on October 5, 2002 when an unidentified vehicle damaged the gutter to the Visitor Contact Station. A few months earlier, a vehicle knocked down the brick wall in front of the Station.

An incident of shots fired towards the refuge from a duck blind along the Marumsco was reported. A Corps of Engineers hygienist made a frantic 911 call to Prince William Police when as he was collecting water samples from a well near the gazebo and several shots were fired in his direction. The police found that duck hunters had been firing over the refuge. Because of the sniper incidents, everyone was a bit edgy. Game Warden Randy Grauer made a personal visit to the owners of the blind to inform them of the problem. The Tyrell family indicated they would control the hunters.

Outdoor Recreation Planner Yvonne Schultz reported an incident of street racing in front of the Contact Station. Individuals frequently do “burn outs” along Dawson Beach Road. There is a great concern for visitor safety in the vicinity of the Station. Marty McClevey has begun a sign plan for the refuge to determine specific signs and pedestrian warning devices to provide some control.

## 18. Cooperating Associations

The refuge continues to work with the Prince William Natural Resources Council to coordinate work and recruit volunteers. Jim Waggener continues as President of the Council.

Efforts continued to create a viable Friends Organization to support the Complex. Marty McClevey facilitated a meeting at the Occoquan Bay National Wildlife Refuge Visitor Contact Station of individuals interested in learning more about how the organization can help the Complex and who potentially will be the key players in getting the organization off and running. Thirty individuals attended the evening meeting. Manager Greg Weiler felt very comfortable with the turnout and the momentum created by this meeting.

The Friends of the Potomac River Refuges obtain 501C-3 status with the State of Virginia to operate as a non-profit organization.

An interim leadership board was set up to help the group get started.

Larry Underwood	President	Bill Teetz	Treasurer
Annette Baker-Toole	Vice President	Elizabeth Reiben	Secretary

## I. EQUIPMENT AND FACILITIES

### 1. New Construction

From December 1<sup>st</sup> until December 5<sup>th</sup>, 2003 the Americorp Team lead by Maintenance Workers' Boska and Revis, made several improvements to the Bird Banding Station. The team constructed a 20' x 20' elevated gravel pad, improved the access road, and spread gravel on several banding trails. More than 60 tons of gravel and stone were used for the project.

In March 2004, Biologist Joe Witt, Outdoor Recreation Planner Marty McClevey and Maintenance Workers Boska and Revis assembled and installed a stationary dock at the environmental education site at the Refuge.

In June 2004 one single unit and one double unit vault toilets were installed. The project took a total of four days to complete

On June 17 2004, construction was completed on a pavilion adjacent to Painted Turtle Pond. The pond area is popular for environmental education and fishing events and serves as a special interest area. Nine volunteers, along with Maintenance Workers' Boska and Revis built the pavilion in two weeks. The volunteer crew, which came from Back Bay National Wildlife Refuge, Virginia, contributed 410 hours of skilled work.

On August 16, 2004, URS Construction Services began installing culverts in the Deephole Point area of the Refuge. Due to time constraints and funding, the contractor could not complete all the required work. Maintenance workers Boska and Revis completed the job. The result is an improved trail for hiking, wildlife observation, and photography.



Culverts at the outflow of Deephole Point

## 2. Rehabilitation

During January 2001 through March 2001, Maintenance Worker Boska, working with several employees of the Belmont Corporation, hauled dirt and rehabilitated the site of the former inner compound. The project included covering old building foundations and roads; backfilling drains, utility lines and old sewer lines; and developing a small pond basin. Later in late September 2001 and early October 2001, Maintenance Workers' Boska and Revis prepared the former interior compound site for seeding in early spring. The equipment used for the project was the Caterpillar D4 dozer, the newly purchased Tufline tandem disc, the Deere 1250 tractor, and the Deere 140 discs.

## 3. Major Maintenance

The Army Corp of Engineers continued to monitor water quality wells at the refuge. Clean-up continued with the demolition and removal of buildings in the inner compound, out-lying buildings, and clean-up and stabilization of the Marumsco Creek side of the refuge. Communication and electrical junction boxes were also removed.

On the afternoon of September 18, 2003, Hurricane Isabel moved through northern Virginia. While winds were greatly reduced from the level 5 category storm it was earlier, rain and storm surge combined to create significant flooding across the area. The Refuge had numerous trees down across roads and trails and extensive flooding in low-lying areas.

The storm surge at the Refuge was impressive in the low areas. In fact, the areas kept flooding during high tide for several days after the storm passed. The most significant damage was to the chain link fence along the perimeter of the shoreline. Over 8,000 feet of fence was destroyed or damaged by the floodwaters. The debris that was forced on and through the fence significantly complicated its removal.



Deephole Point Road after Hurricane Isabel





Wildlife Drive at Refuge after Hurricane Isabel's storm surge.

Inmates from the Prince William County – Manassas Regional Adult Detention Center assisted Maintenance workers Boska and Revis with removing portions of the security fence at the Refuge. The 4 to 5 person inmate crew worked at the Refuge for two weeks, removing nearly 3/10<sup>th</sup> mile of fence. The first week was August 2<sup>nd</sup> to August 6<sup>th</sup>, 2004; the second week was August 16<sup>th</sup> until August 20<sup>th</sup>, 2004. From August 9<sup>th</sup> until August 13<sup>th</sup> 2004, a 17-person crew from the Virginia State Parks Youth Conservation Corps (YCC) worked on the project. The crew removed nearly a half-mile of fence, removed vegetation and assisted Refuge maintenance workers with other jobs associated with the project. Due to the efforts of the two groups in clearing the vegetation and debris from the fence over 3.75 tons of fence materials were transferred to a scrap metal recycler.





Maintenance Workers' Boska and Revis and the YCC crew.

4. Equipment Utilization and Replacement – Nothing to Report
5. Communication Systems – Nothing to Report
6. Computer Systems – Nothing to Report
7. Energy Conservation

In 2002, the refuge set up an account with Prince William County landfill. The account allowed the refuge to drop off larger quantities of recyclable materials as a commercial hauler. The refuge took recyclable materials, including glass, metal, paper, cardboard, batteries, antifreeze, etc., to the landfill for disposal.

8. Other – Nothing to Report

## J. OTHER ITEMS

1. Cooperative Programs – Nothing to Report
2. Other Economical Uses – Nothing to Report
3. Items of Interest

In August of 2002, strong winds from a thunderstorm generated micro burst knocked trees down from the Great Marsh Trail at Mason Neck across Belmont Bay and into the Occoquan Bay Refuge. Many large trees were uprooted by the high winds. The woodland pool near Fox Road that is used for environmental education was completely blocked by three large trees.

Gary Swihart from the Gloucester, Virginia Ecological Services Office, conducted electro shocking at Painted Turtle Pond. Fred Pickney and staff from the Annapolis Field Office collected a number of bluegill for contaminant analysis. The purpose of the electro shocking was to determine if the future fishing events can be take home fish events of catch and release. The refuge opted to make the first event a catch and release to ensure safety. Gary gave recommendations on stocking and pond improvements. Just prior to the event, fish were ordered from Zetts Fish Hatchery in West Virginia.

A collection of birds, held for many years in a freezer, were mounted for display in the Visitor Contact Station. Marty McClevey coordinated the work through Outback Taxidermy in Triangle, Virginia.

Marty McClevey ordered a series of aerial photos for the Complex. The work on this began late in Fiscal Year 2001 and ground to a halt when terrorists crashed airliners into the Pentagon and the World Trade Center twin towers. Finally in December of 2001, aircraft were allowed in the airspace over the region and the contract with Air Survey Incorporated of Dulles, Virginia could proceed. Specific photos were taken of Featherstone NWR, Occoquan Bay NWR and Mason Neck NWR. An overall photo of the Complex was taken from around 40,000 and provides an outstanding view of the three refuges. Four photos, one of each refuge and the Complex, were mounted and framed for use at Headquarters and the Contact Station. The photos have proved to be of great value to the refuge staff.

Outdoor Recreation Planner Marty McClevey ordered curatorial storage boxes to more carefully hold items from the three refuges of the Complex. McClevey found that a collection of artifacts from archeological digs at the Occoquan Refuge and acquired from the Army, may need to be formally transferred to the site in the form of a loan. Specifics on this will be researched in Fiscal Year 2005. McClevey has had meetings and discussions with Regional Archeologist John Wilson and representatives of the Prince William County Historic Preservation Office to discuss the conservation of two 17<sup>th</sup> century gravestones on the Occoquan Refuge. The two stones, located on the refuge at the end of Charlie Road, are badly deteriorated and in need of conservation. There is a concern that if the stones are not removed and protected, in a short time span, both stones will be lost. There is great interest in moving the stones for their protection. It

is anticipated that the specific loan agreements and details on moving the stones will be worked out in the early part of 2005.

The Belmont development surprised everyone when they started construction of a two high rise condominium complexes on the northeast boundary of the refuge. These buildings are about 6 stories tall and are a gross intrusion on the view shed of the refuge and a possible threat to migratory birds during periods of low visibility. Apparently the structures were approved prior to the transfer of the Woodbridge Research Facility to the US Fish and Wildlife Service.

Outdoor Recreation Planner Marty McClevey and Maintenance Worker Jamie Revis traveled to the Rappahannock River Refuge in March of 2004 to assist Biologist Sandy Spencer and Manager Joe McCauley with a prescribed burn. This was a great opportunity to lend support to another refuge and gain additional experience in fire operations.

On August 29, 2004, Virginian Native Plant Society President Nicky Stanton discovered a patch of mile-a-minute weed near the gazebo. Marty McClevey removed the invasive vine but discovered several more and extensive patches around the refuge. This has brought out a great awareness of the need to prepare a plan for the control or eradication of invasive plants on the refuge. McClevey will be conducting a workshop in November of 2004 for local agencies and conservationists to address the current crisis in the region. Some of the top invasive plants of Occoquan are microstegium, mile a minute weed, Japanese knotweed, Chinese lespedeza, beefsteak plant, Bradford pear, tree of heaven and clematis.

#### 4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

#### K. FEEDBACK – Nothing to Report

# FEATHERSTONE NATIONAL WILDLIFE REFUGE

## Woodbridge, Virginia

### INTRODUCTION

Featherstone National Wildlife Refuge is an unmanned station and is located 4 miles southwest of Mason Neck at the mouth of Neabsco Creek where it joins the Potomac River. The refuge is approximately 22 miles from Washington, D.C., in Prince William County, Virginia.

Acquired in 1979 from the District of Columbia, Featherstone NWR was originally proposed to be one of a 17 unit Potomac Estuary National Wildlife Refuge Complex. No additional Federal acquisitions were made after this plan was proposed in 1970 except Marumsco NWR until 1998. The additional land was added to Marumsco NWR, creating Occoquan Bay NWR. This addition changed Mason Neck National Wildlife Refuge and its satellites (Featherstone and Marumsco NWR) into a complex.

Featherstone NWR contains 325 acres of woodland and freshwater tidal marsh along the northern shore and mouth of Neabsco Creek and north around Featherstone Point along Occoquan Bay. Topography is almost entirely flat on the east side with patches of bottom land hardwoods and tidal marsh. The Richmond, Fredericksburg and Potomac Railroad bisects the Refuge from north to south with built up elevations of 80 feet separating the east from the west with its series of sharply incised peninsulas. An abandoned railroad grade also traverses the Refuge, impacting the refuge with the compacted roadbed, castoff slag and coal from early train use, and channeling some of the drainage into vernal pools and swamps. Farm Creek passes through the northeastern portion of the Refuge before draining into Occoquan Bay and the Potomac River.

Official access is by two meandering right-of-ways, neither of which is accessible to vehicles. The staff utilize the commuter rail station built next to the refuge as a way to cross the tracks and gain quicker access to the refuge as an improvement of when they use to walk the tracks to get to the refuge without having to cross creeks and vernal unauthorized activity does occur. Refuge staff have received various reports of illegal hunting, trapping, and camping. Staff visits have been able to confirm presence of such activity but not the level due to poor accessibility and limited staff time.

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#### A. HIGHLIGHTS



#### B. CLIMATIC CONDITIONS

See Mason Neck NWR for details.

#### C. LAND ACQUISITION

1. Fee Title – Nothing to Report
2. Easements – Nothing to Report
3. Other – Nothing to Report

#### D. PLANNING

1. Master Plan – Nothing to Report
2. Management Plan – Nothing to Report
3. Public Participation – Nothing to Report
4. Compliance with Environmental Mandates – Nothing to Report
5. Research and Investigations – Nothing to Report
6. Other – Nothing to Report



## E. ADMINISTRATION

### 1. Personnel

See Mason Neck NWR – Staff shared as part of Potomac River NWR Complex.

### 2. Youth Programs – Nothing to Report

### 3. Other Manpower Programs – Nothing to Report

### 4. Volunteer Program – Nothing to Report

### 5. Funding – Nothing to Report

### 6. Safety – Nothing to Report

### 7. Technically Assistance – Nothing to Report

### 8. Other Items – Nothing to Report

## F. HABITAT MANAGEMENT

### 1. General

Featherstone Refuge presently consists of 325 acres of which 80 acres are forested upland, 220 acres are palustrine wetland, and 25 acres are open water. This area is a tidally influence freshwater wetland. The portions of “Hidden Lake”, the main portion of Farm Creek running through the refuge was at one time diked, presumably for fisheries management in the late 1800's or early 1900's. This dike has deteriorated to a few pilings in the water and short earthen section that is no barrier to water, wildlife, or boaters.

### 2. Wetlands

The forested wetland sections of the refuge are comprised of red maple, sweetgum, yellow poplar and water willow. Emergent marsh is located mainly on the southern section of the property.

### 3. Forests

The pockets of upland forest scattered throughout the refuge are at or near climax stage and are comprised mostly of mixed oak species with Virginia and loblolly pine. In most areas there is little ground cover. Areas bordering Neabsco Creek consist of steep slopes with an understory of mountain laurel.

### 4. Croplands – Nothing to Report

5. Grasslands – Nothing to Report
6. Other Habitats – Nothing to Report
7. Grazing – Nothing to Report
8. Haying – Nothing to Report
9. Fire Management – Nothing to Report
10. Pest Control – Nothing to Report
11. Water Rights – Nothing to Report
12. Wilderness and Special Areas – Nothing to Report
13. WPA Easement Monitoring – Nothing to Report

#### G. WILDLIFE

##### 1. Wildlife Diversity

The refuge provides important wintering and nesting habitat for waterfowl, wading birds and shorebirds. Wintering and migrating waterfowl include black duck, mallard, blue-winged teal, wood duck, hooded merganser, green-winged teal, gadwall, and lesser scaup. The dense and diverse marsh vegetation attracts many wading birds including great blue heron, great egret and double-crested cormorants. Osprey, red-tailed and red shouldered hawks, northern harrier, kestrel, and Cooper's hawks have all used the Refuge.

##### 2. Endangered and/or Threatened Species

Bald eagles are frequently observed using the refuge. The shoreline provides important feeding and perching habitat. The pair that nested on Featherstone initially nested in the swamp area between the railroad tracks and the river just above the mouth of Neabsco Creek. They moved the next year to a chestnut oak on the third peninsula in from the railroad bridge, and after three years moved west, possibly onto the neighboring developer's land and then back out to near the first site. Their last several locations were not productive and their current status is unknown.

##### 3. Waterfowl – Nothing to Report

##### 4. Marsh and Water Birds

Great blue herons are commonly seen on Featherstone Refuge. Other birds in this group which utilize the refuge include egrets and double-crested cormorants.

## 5. Shorebirds, gulls, Terns, and Allied Species

Due to the dense vegetation, mostly forest, the most likely places to observe species in this group is just off the refuge in the waters of the Occoquan Bay and Potomac River. Mudflats exposed at low tide are high in fine sediments and anaerobic, producing little vegetation or fauna to attract birds for feeding and unattractive for loafing.

## 6. Raptors

Osprey, red-tailed and red-shouldered hawks, northern harrier, kestrel, and Coopers hawks have been recorded on the refuge.

## 7. Other Migratory Birds – Nothing to Report

## 8. Game Mammals

White-tailed deer, red fox, raccoon, gray squirrel, and beaver all use the refuge.

## 9. Marine Mammals – Nothing to Report

## 10. Other Resident Wildlife – Nothing to Report

## 11. Fisheries Resources – Nothing to Report

## 12. Wildlife Propagation and Stocking – Nothing to Report

## 13. Surplus Animal Disposal – Nothing to Report

## 14. Scientific Collections – Nothing to Report

## 15. Animal Control – Nothing to Report

## 16. Marking and Banding – Nothing to Report

## 17. Disease Prevention and Control – Nothing to Report

# H. PUBLIC USE

## 1. General

The refuge is closed to all public use. The Virginia Commuter Rail Service has a rail station along the edge of the property. This may create an opportunity for the Refuge to be in the public eye without being overrun by non-wildlife dependent uses. Refuge staff will cooperate with the rail station to construct some information panels as funding and staffing permits.

2. Outdoor Classrooms – Students – Nothing to Report
3. Outdoor Classrooms – Teachers – Nothing to Report
4. Interpretive Foot Trails – Nothing to Report
5. Interpretive Tour Routes – Nothing to Report
6. Interpretive Exhibits and Demonstrations – Nothing to Report
7. Other Interpretive Programs – Nothing to Report
8. Hunting – Nothing to Report
9. Fishing – Nothing to Report
10. Trapping – Nothing to Report
11. Wildlife Observation – Nothing to Report
12. Other Wildlife Oriented Recreation – Nothing to Report
13. Camping – Nothing to Report
14. Picnicking – Nothing to Report
15. Off-Road Vehicling – Nothing to Report
16. Other Non-Wildlife Oriented Recreation – Nothing to Report
17. Law Enforcement

On April 27<sup>th</sup>, 2002, Refuge Officer Boska, along with USFWS Special Agents, a National Park Service Ranger, a Virginia Game Warden, and officers from the Prince William County Police Department removed and arrested three trespassers. The three individuals constructed a well-maintained campsite on the Refuge. A building, with 6 beds, one small cooking tent, and a fish cleaning area made the campsite. Two individuals were illegal immigrants and were released to the Immigration and Naturalization Service. The remaining individual was charged with trespass.



One of the sleeping quarters at the Refuge



This building had accommodations for sleeping six people.

In 2003 trespass continued to be a problem at the Refuge. Maintenance Workers Boska and Revis fenced illegal paths of entry and posted boundary signs at prominent entry points of illegal entry.

18. Cooperating Associations – Nothing to Report

#### I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report
2. Rehabilitation – Nothing to Report
3. Major Maintenance – Nothing to Report
4. Equipment Utilization and Replacement – Nothing to Report
5. Communication Systems – Nothing to Report
6. Computer Systems – Nothing to Report
7. Energy Conservation – Nothing to Report
8. Other – Nothing to Report

#### J. OTHER ITEMS

1. Cooperative Programs – Nothing to Report
2. Other Economic Uses – Nothing to Report
3. Items of Interest – Nothing to Report
4. Credits

Everyone on the staff contributed to the writing of this report. Manager Weiler reviewed and signed it. Refuge Staff and Refuge Volunteer Bill Wallen contributed the pictures.

K. FEEDBACK – Nothing to Report